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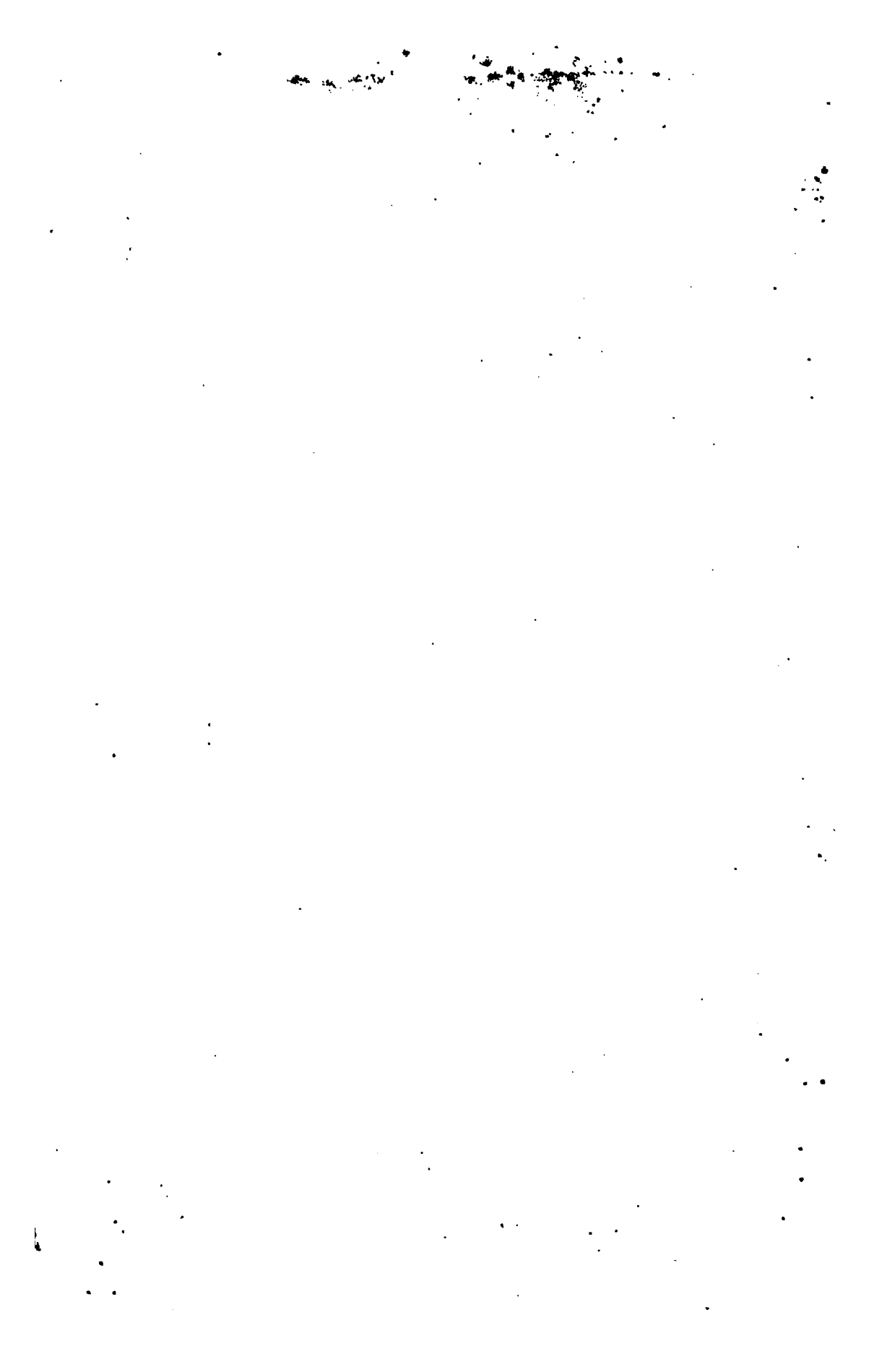
NORTH SEA PILOT
PART I.
SHETLAND & ORKNEYS
1876

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NORTH SEA PILOT.

PART I.

SHETLAND AND ORKNEYS.

BEING THE RESULT OF VARIOUS SURVEYS MADE BY ORDER,
OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

SECOND EDITION.



PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

LONDON:

PRINTED FOR THE HYDROGRAPHIC OFFICE, ADMIRALTY:

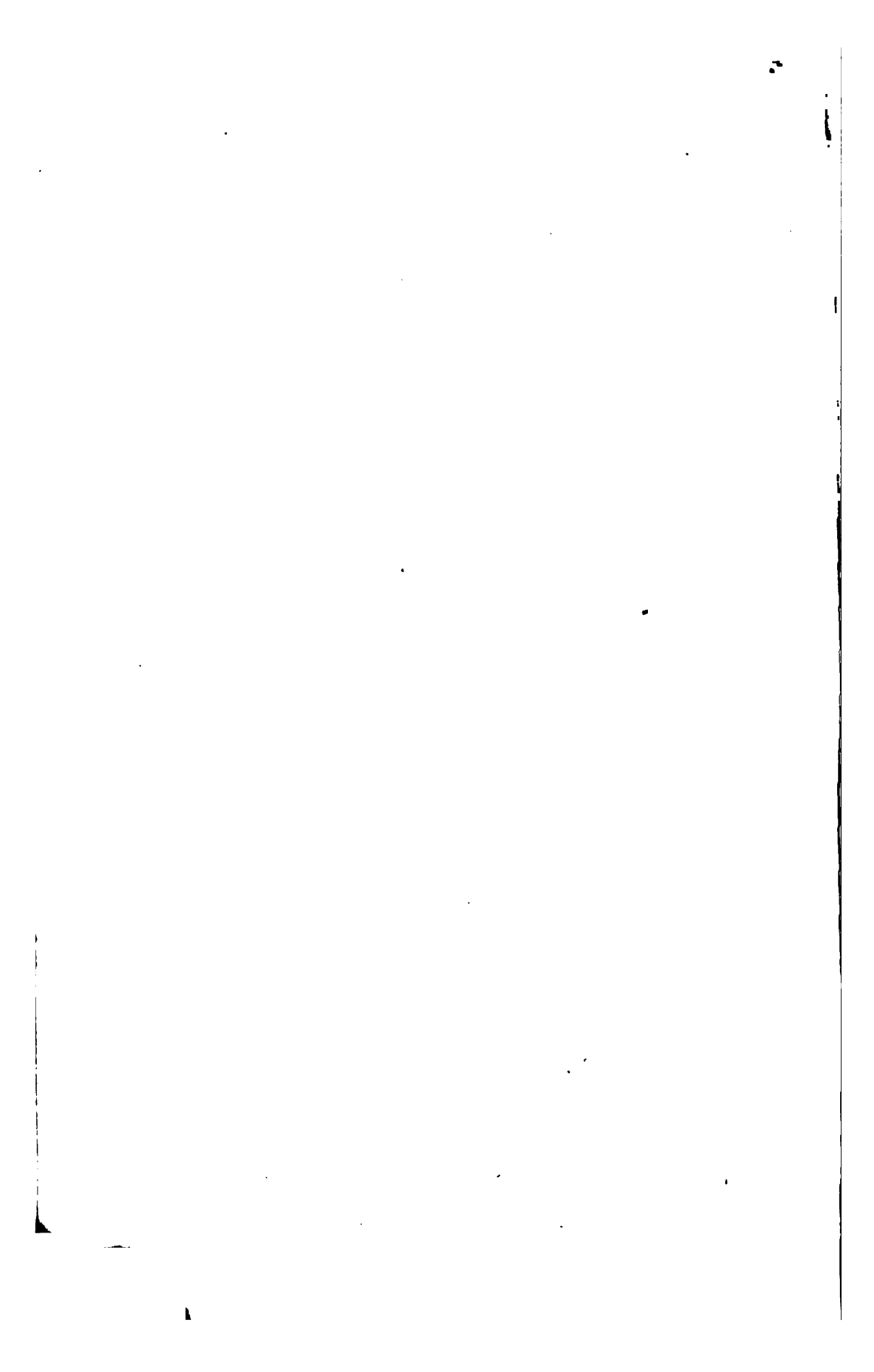
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ADVERTISEMENT.

THE North Sea Pilot, Part I., contains Sailing Directions for Shetland and the Orkneys. The directions for Shetland were prepared by Mr. E. K. CALVER, Master, R.N., from materials supplied by the late Commander G. THOMAS, (who with Lieutenant W. LORD, R.N., was engaged on the survey of the whole group between the years 1825 and 1834, from which the Admiralty Chart is published), also from information collected by Mr. CALVER during his visit to Shetland in the year 1855.

The Orkney Directions are by Lieutenant F. W. L. THOMAS, R.N., (who, with Commanders G. THOMAS and A. B. BEECHER, and Mr. J. S. WELLS, Master, R.N., was employed on a survey of the islands between the years 1835 and 1848,) with additions by Mr. CALVER in 1855.

The whole was revised by Mr. GEORGE MARSH, Master, R.N., of the Hydrographic Office, Admiralty, in 1856.

In the present edition the most recent information has been introduced by Staff Commander W. H. SHARP, R.N.

Part II. of the North Sea Pilot contains directions for the North and East Coasts of Scotland. Part III. contains the East Coast of England, and Part IV. the Coasts of Holland and Belgium, with general directions for the navigation of the North Sea.

F. J. E.

Hydrographic Office, Admiralty, London.
February 1876.

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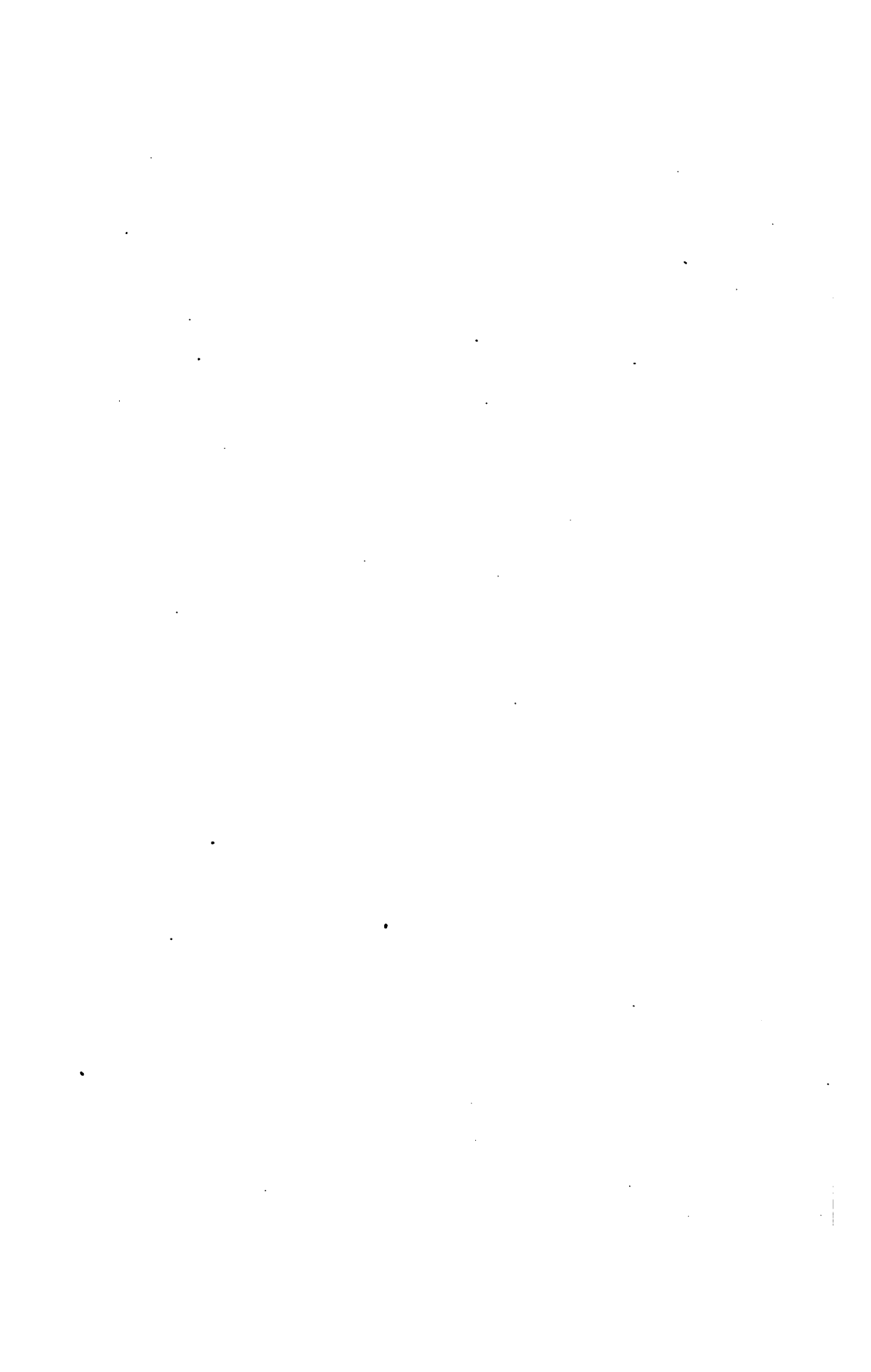
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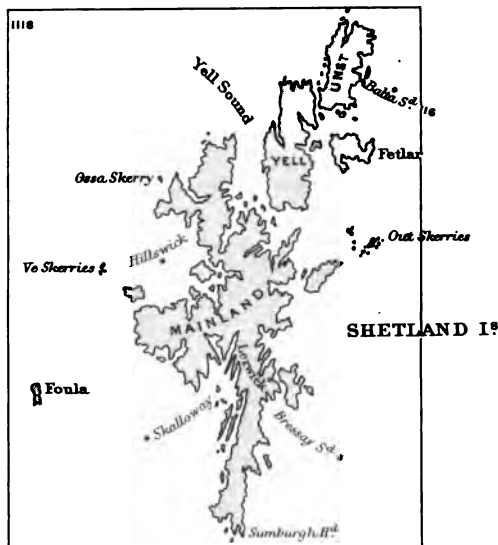
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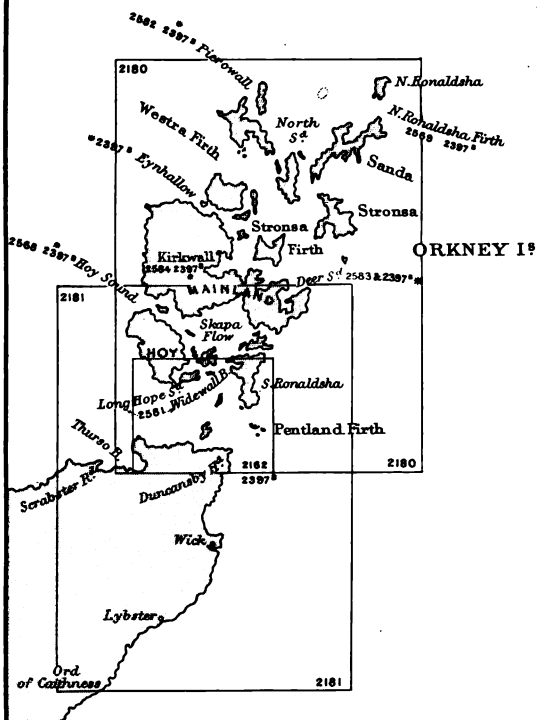
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NORTH SEA PILOT.

PART I.

SHETLAND AND ORKNEYS.

CHAPTER I.

SHETLAND.—SUMBURGH HEAD TO LUNNA HOLM.

VARIATION IN 1876.

Sumburgh head - - - 21° 50' W.

The group of islands and rocks, supposed to be the *ultima Thule* of the ancient Romans, and known to us under the general appellation of Shetland* or Zetland, are more than one hundred in number, and are situated between lat. 59° 51' and 60° 51' 30'' N., and long. 0° 42' and 1° 49' 30'' W. Fair island, lying 23 miles to the south-westward, and Foula, 13 miles to the westward, are also considered as belonging to the group. Thirty-four of the islands are inhabited: the names of the principal ones are Mainland, Yell, Unst, Fetlar, Bressay, Whalsey; those of secondary size are Muckle Roe, Papa Stour, West Burra, East Burra, Noss, Uyea, Vaila, Mousa, Vementry, Little Papa, Hascosea, Hildasay, and Great Halvera; while the remainder consists of holms, stacks, and skerries.

PHYSICAL FEATURES.—Nearly all the large islands are deeply indented by bays and voes, as the sheltered harbours are termed, affording facilities for internal communication and excellent anchorage for vessels; many of them are extensive, and well sheltered from every wind. Numerous hills diversify the face of the country and traverse it in every direction, the culminating point being Ronas, corrupted from Rooe-ness (Red-ness), in the parish of North Mavine, which attains an elevation of 1,476 feet; they are generally bleak and mossy, with patches of cultivation interspersed. Neither tree nor shrub is to be seen on any of the

* See Admiralty chart of the Shetland isles, by the late Commander G. Thomas, R.N. No. 1,118; scale, $m = 0.5$ inches. Also Admiralty general chart of the North sea from the Channel to the Norway sea, No. 2,389; scale, $d = 3.0$ inches.

2 SHETLAND.—SUMBURGH HEAD TO LUNNA HOLM. [CHAP. I.

islands, except in a few private gardens. In all directions may be seen majestic cliffs and bold headlands, with rocks of immense size detached from the land; some are perforated by arches, in others are deep caverns and recesses, while many are cleft nearly to their base, affording ample proof of the destructive power of the sea, which lashes the Shetland shores.

No particular description is given in the following directions of the appearance of the land at many parts of the coast, as the similarity which prevails in this respect renders it, in many cases, next to impossible to assign any distinct individual character to certain localities that would be of use to the seaman in making the land.

CURRENTS.—The currents among the islands are exceedingly rapid, but the most noted are at the northern and southern extremities of the group, where they give rise to a high, confused, and dangerous sea, termed a roost. Through Yell, Blue Mull, and Whalsey sounds, the maximum rate of the stream, on springs, is about 6 to 7 knots. Within the voes the stream of tide is not sensible.

SEASONS.—An intelligent and observant local writer, the late Dr. Edmondston, described the climate of the Zetland islands as very variable and damp, although by no means generally unwholesome to their inhabitants. Spring can scarcely be said to commence until April, and there is but little general warmth before the middle of June; the summer terminates, for the most part, with August, though sometimes it continues through September; autumn is a very uncertain period; and winter begins with the middle of October, and occupies the remaining months.

Though the winter is dark and gloomy, it is amply compensated by the continued light of the summer months. The nights begin to be very short early in May, and from the middle of that month to the end of July, darkness is absolutely unknown; the sun scarcely quits the horizon, and his short absence is supplied by a bright twilight.

The following additional information respecting Shetland weather and its indications is the average result of more than twelve years' observations, noted by the Rev. Z. M. Hamilton, the present respected minister of Bressay.

November and January are the most stormy months of the year, and next to them are December and February; in these latter months, however, the direction of the wind is more changeable, while the bad weather is neither so violent nor so protracted. March is often introduced by high winds, but not of a dangerous character. In April and May the weather is moderate. June and July are the finest months of the year. About the middle of August rain sets in, and the weather becomes

somewhat broken. September is changeable, and gales are common towards the latter end of the month. October is often fine, accompanied by a low temperature.

WINDS.—Northerly and easterly winds prevail during February and March. Although the weather is then cold, it is more settled and uniform than when the wind is either from the south or from the west; when it comes from these quarters, it is for the most part—indeed, always in winter—accompanied by heavy falls of rain. Heavy gales from West and N.W. occur in September, and often destroy the greater part of the crops in a single night. October is sometimes a mild month, but nothing can equal the uncertainty of the weather during the three months that follow; gales of wind from the most opposite points, attended by rain and snow, come on in rapid succession, often in the space of a few hours.

The atmospherical phenomena by which the various changes are marked, though well known to the native fishermen and others, do not admit in every case, of being easily described. All, or nearly all the sudden gales are from the N.W. or North, and in winter are generally preceded by thick weather, unnaturally warm for the season, continuing for a longer or shorter period; the thickness then clears away; a bright calm morning succeeds, exhibiting a dark lead-coloured sky to the N.W. or North, and the gale quickly follows like a clap of thunder, lasting in its extreme violence, however, only from 9 to 12 hours. The other heavy gales are from the south-eastward, but they are not so sudden; and to the careful observer their arrival is always foreshadowed. In the winter season they are often preceded by the Northern Lights darting their brilliant streams of light in the most fantastic forms across the Zenith; and should these appearances continue for nights together, the weather also remaining fine, the gale and bad weather which succeed are sure to last a considerable time; if, on the contrary, the Aurora only rises to a little above the horizon, fine weather is thereby unfailingly indicated. Hard winds from the south-westward are accompanied by showers, and should the latter continue, northerly winds and moderate weather will follow; but if the south-westerly wind lulls and backs to the southward or south-eastward, a gale will succeed and continue till the falling of heavy rain again changes the wind to S.W. This alternate backing of the wind from S.W. to the southward, and *vice versa*, is often in the winter season, continued for weeks together. When northerly winds succeed south-westerly winds and rain as above, they will not continue more than 36 hours, if so long; but when the wind veers to the northward in dry moderate weather, it will generally remain for a week at least in the same quarter. It only remains to be observed that the common prognostics of weather, such as a halo round the moon, a heavy swell from the offing without any apparent cause,

4 SHETLAND.—SUMBURGH HEAD TO LUNNA HOLM. [CHAP. I.]

the sudden ebb and flow of the tide, and the production of a strong current where, in general, there is but little, are all observed in Shetland; but, as these signs are familiar to every seaman, they need not be described here.

In clear weather, the Shetlands may be seen at a distance of 30 or 40 miles in every direction; but, from the humidity of the climate, it is more commonly the case that they are not visible until close-to; and as there are from 35 to 40 fathoms but little outside the rock edges, and the lead consequently fails as a guide, wrecks are not of unfrequent occurrence. They would, however, be more numerous, were it not that the dangers are all visible when there is any swell, and that an anchorage or harbour is to be found upon nearly every part of the coast.

FOGS.—Fogs are very prevalent in April, May, and June.

PILOTS.—No pilot* can be procured for any of the harbours except in moderate weather, and when the vessel has arrived in smooth water; such assistance will, however, be unnecessary, if proper attention be paid to the following directions, except for using the various passages between the islands and the numerous small harbours frequented by the native vessels, when local knowledge is indispensable.

In passing the group with a fair wind from the eastward or westward, it is necessary to keep either to the northward of lat. $60^{\circ} 55'$, or to the southward of $59^{\circ} 47'$, until the islands have been well cleared; but the southern passage is to be preferred, as Sumburgh head light in Shetland, or Start and North Ronaldsha lights in Orkney, will, if seen, be useful for leading to a port of refuge, or for taking a fresh departure.

Before treating the general pilotage of the Shetlands, a brief description will be given of Fair isle, as it is in the line of approach from the southward.

FAIR ISLE, lying nearly midway between the groups of Orkney and Shetland, is noted as having been the scene of the wreck of the flagship of the Duke of Medina Sidonia, the admiral of the Spanish Armada, in 1588. The island is $2\frac{3}{4}$ miles in length N.E. and S.W., and $1\frac{1}{2}$ miles in breadth; it is composed of lofty hills of sandstone. The Wart or Ward hill in lat. $59^{\circ} 32' 45''$ N. and long. $1^{\circ} 37' 30''$ W., attains an elevation of 713 feet, and may be seen from 30 to 36 miles off in clear weather. It thus serves as a useful fairway beacon to vessels bound to Archangel, to Greenland *via* Shetland, and to those going north-about to America or the West Indies, all of whom do, or ought to pass within sight of it. As deep water surrounds the island, it is dangerous in foggy weather, and many wrecks have occurred upon it from this cause.

* There are no licensed pilots in Shetland.

High inaccessible cliffs nearly surround the island—that at the Ward hill being 650 feet in height ; but towards the south-western extremity the shore is low and rocky, and here the inhabitants reside near a small bay or wick, which is too much encumbered by rocks to be visited by a stranger even in a boat, except under the guidance of a native. Small and intricate as it is, however, the fishing sloops belonging to Shetland contrive to obtain shelter in it, during the summer, from northerly and north-westerly gales, but they put to sea immediately upon the appearance of a change of wind. The south-west angle of the island is Malcolm head, which has high perpendicular cliffs upon three sides, but it slopes rapidly down towards the east ; it is further distinguished by the ruin of a signal-house on its summit, from whence, during last war, intelligence was communicated to the cruisers. Malcolm head has been pointed out as a desirable site for a lighthouse. Upon the east side of the island is Sheep craig, an isolated mass of rock of the same height as Malcolm head ; it is perpendicular on all sides, the highest part being towards the south-west. Besides the inlet already described at the south-west end of the island, there is also, on the east side, a small bay, formed by the peninsula of Boness, named the North haven, near the head of which, on a small beach, is the best landing place on the island, but it can be used only in moderate weather. Near the middle of the haven is a small stack or rock, 20 feet above water, to a mooring ring in which, small sloops may make fast in tolerable security during summer, but a swell quickly sets in after the sea has made outside.

All the dangers round the island are visible. Off the south end is the Out stack, $\frac{1}{2}$ of a mile from the shore ; although it is always above water, a vessel inshore may be set by the tide too near it in calm weather. Close in, heavy squalls, baffling winds, and calms are common ; the island should, therefore, not be approached nearer than a mile.

By day, Fair isle is easily distinguished by its remarkable outline, but it is an object of anxiety in the night and during thick weather. Should the island be near the course of the vessel, and Sumburgh head light be visible, the vessel will be 5 miles to the eastward of the island so long as the light is to the northward of N.E. $\frac{1}{2}$ N., and she will be the same distance to the westward of the isle while the light is to the eastward of E.N.E. In thick weather, a decreasing depth would, probably, show an increasing proximity to the island.

TIDES.—It is high water full and change, at Fair isle, at 11h., but the stream continues to run to the southward until 0h. 30m. ; its direction then changes from S.E. to S.S.W., and so gradually round westerly, the entire circuit being completed in a little more than 12 hours. Springs rise 5 feet, and neaps range 3 feet.

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FAIR ISLAND ROOST.—The detached rocks near the south-west end of the island are named the Keels, and off them is the Roost of the Keels, a dangerous race, which trends north-west with the ebb, and south-east with the flood, for a distance of 2 miles. This phenomenon is caused by a concentrated and rapid tide passing over a rugged bottom; and when the stream is opposed by the wind, a confused and bursting sea is quickly raised, in which vessels become entirely unmanageable, and are sometimes lost. No vessel having the option should attempt to pass through it, and those passing near the island with an easterly wind and ebb tide should be careful to bear up in time, and pass to leeward of the island to avoid being driven into the roost; the same rule must be observed with a westerly wind and flood tide.

The bearing and distance from the Ward hill of Fair Isle to Pentland skerries lights are—W.S.W. $\frac{3}{4}$ S., 65 miles; to Copinsha, S.W. by W. $\frac{3}{4}$ W., 49 miles; to Start lighthouse, W. by S., $27\frac{1}{4}$ miles; to Dennis head beacon, West, $24\frac{1}{4}$ miles; to Mull head, Papa Westra, W. $\frac{3}{4}$ N., 40 miles; to the highest point of Foula, North, 89 miles; and to Sumburgh head lighthouse, N.E. $\frac{3}{4}$ E., $21\frac{1}{2}$ miles.

The passage between Fair isle and Shetland is termed by mariners "the Hole."



Sumburgh head, N.W. $\frac{3}{4}$ N., 2 miles.

SUMBURGH HEAD.—The southern portion of Shetland is of too marked a character to be easily mistaken after having once been seen. The whole of it is considerably elevated, the highest point being Fitful head, a noble promontory, having an unbroken fall of upwards of 900 feet. Sumburgh head, the southern headland of Shetland, is less elevated, and when seen from a good offing, has the appearance of several detached hummocks, with the lighthouse perched on the brink of the southernmost one. The head is a peninsula, connected to the mainland by a low sandy isthmus, which separates West voe from Gret Ness voe. The highest part of the head is 450 feet above the sea. The east side of it consists of high precipitous cliffs, from whence the surface slopes steeply towards West voe.

LIGHT.—The lighthouse, built of stone, is on the southern brink of the Head, forming, with its outbuildings, a prominent object from every direction seaward. The light shown from it is *white* and *fixed*, is elevated 300 feet above high water, and may be seen from a distance of 21 miles in clear weather. It is in lat. $59^{\circ} 51' 15''$ N., and long. $1^{\circ} 16' 30''$ W.

West voe and Gret Ness voe are sometimes used by native vessels with off-shore winds, but neither are safe stopping places, as southerly winds blow right into the former, while the latter is shallow, and is gradually becoming more so.

If bound to the northward, along the east side of Shetland, and the wind freshen from the eastward, instead of passing to windward of Sumburgh head, it will be more prudent to bear up for Quendale bay (which is fully described at page 83).

From Sumburgh head to Horse island the course and distance are W. by N., $1\frac{1}{4}$ miles; from Horse island to Cross island, N. $\frac{1}{2}$ E., $1\frac{1}{4}$ miles; and from Cross island to the anchorage in Quendale bay, N. by E. $\frac{3}{4}$ E., nearly $1\frac{1}{2}$ miles.

SUMBURGH HEAD ROOST.—This dangerous race, in which the sea rises to a great height, and breaks with violence at times even in calm weather, extends either from Sumburgh head, or from Horse island a little to the westward of it, according to the condition of the tide and the opposing sea. At the beginning of the flood stream, the roost is off the head; it then gradually works to the south-eastward and southward, ceasing with the end of the flood stream, when “the Still,” as it is termed by the natives, occurs. At the beginning of the ebb, the roost is more abreast of Horse island, and gradually extends from it, first to the south-west, and then to the westward and northward, ceasing again with the low-water slack. In spring tides, with an opposing sea, the roost is fully 3 miles wide, but at other times it is not more than $\frac{1}{2}$ a mile; it is most dangerous when the ebb stream is opposed by a strong north-west wind, and it is to be equally avoided whenever the wind is strong between W.S.W. and North, and from East to S.W. In north-easterly winds there is but little roost.

As in this confused, tumbling, and bursting sea, vessels often become entirely unmanageable, and many have foundered in it, while others have been tossed about in it for days together in light weather, it should be passed at a wide berth. No other directions can be given.

NO NESS.—Being abreast Sumburgh head, the course and distance to the east point of Mousa island are N.E. $9\frac{1}{4}$ miles. The intermediate coast is composed of comparatively low cliffs, the most prominent portion being No Ness, rather more than a mile to the south-west of Mousa. From its advanced position and precipitous character, it cannot easily be mistaken. The whole of the shore up to this point is steep-to, except between Troswick Ness and Levenwick, where the Baas of Clumly extend S.S.E. from the shore for 2 cables; they are covered at high water, and have a depth of 19 fathoms close to them. These rocks are out of the proper track, either running or working, but the clearing mark is the east end of

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Mousa island (an overhanging cliff), open a short distance to the eastward of No Ness.



Levenwick, N.W. $1\frac{1}{2}$ miles.

LEVENWICK.—Should a vessel become embayed in a south-easterly gale between Sumburgh head and Mousa island, it is very possible to save life and property in Levenwick, an anchorage upon the south side of the bight within No Ness. For this purpose, bear up for the latter promontory in good time, and approach it as closely as convenient, as it is steep-to; then a N.W. course for $1\frac{1}{2}$ miles will lead to Levenwick; give the low sloping rocky point bounding the anchorage (shown extending from the left of the accompanying view) a berth of one cable, and anchor within it in 5 fathoms, with No Ness just shut in by the point referred to. Here there is fair berthage for three or four vessels, but a heavy swell sets into it in easterly gales, and, consequently, no vessel that can avoid doing so, should use it between the months of November and March.

MOUSA ISLAND, $1\frac{1}{2}$ miles long, North and South, and $\frac{1}{2}$ a mile broad, is separated from Mainland by a deep channel $\frac{1}{2}$ a mile wide. All the dangers surrounding the island show themselves, but Gruna Baas, a sunken reef, out of the common track, with $5\frac{1}{2}$ fathoms over it, on which the sea breaks in gales, lies $\frac{3}{4}$ of a mile to the north-east of the north part of the island. The east end of Mousa is a low overhanging cliff, named the Bard of Mousa, with several triangular stacks lying at its base; by this feature the island may readily be known when sighting it in thick weather. An ancient Pictish tower stands on a low point on the west side of the island.

There is a pier at Sandside.

REFUGE.—The channel within the island is clear of danger, and available for imperfect refuge, should a vessel become embayed in thick weather between Mousa and Haly Ness, the projecting point to the northward of the island. In such a case, the position of Gruna Baas would be clearly marked by broken sea; pass upon either side of the reef, and anchor under the island, in 14 or 15 fathoms water.

If, on the other hand, a vessel is embayed north of Haly Ness, and unable to fetch Bressay sound, the only alternative is to bear up for and anchor in Gulberswick, where the holding ground is good, and from which the sea is somewhat deflected by the southern part of Bressay island.

CAST.

The **COAST** from Mousa to Lerwick is free from danger, and consists of cliffs of varying height, perforated by many caves, and backed, for the most part, by an elevated and nearly continuous ridge of hills of primitive clay slate. Vessels working towards Lerwick should keep this shore aboard, for during both flood and ebb there is an eddy, or counter tide, setting along shore to the north-eastward, the whole way from Aith Baas to Trebister Ness.

From Bard head, Mousa, the bearing and distance to Noss head are—N.E. $\frac{1}{2}$ E., 9 $\frac{1}{4}$ miles; to Ord head N.E. by N., 7 miles; and to South Ness, upon the west side of the entrance to Bressay sound, N.N.E. $\frac{1}{2}$ E., 9 miles.



Noss head, N.E. 9 miles.

BRESSAY and **NOSS ISLANDS**, forming the eastern defence to Bressay sound, have a well-marked outline, and are readily distinguished, whether approaching them from the northward or southward; the Ward hill of Bressay, and the noble headland of Noss being the principal objects. Bressay, about 5 $\frac{1}{2}$ miles in length, and from 2 to 3 miles in breadth, has a rocky outline throughout, presenting cliffs of considerable elevation seaward, and low rocky points toward mainland. Its margin has been deeply indented in many places by the action of the sea; the interior is hilly, and the lower slopes and hollows are generally well cultivated. The Wart or Ward hill of Bressay is situated near its southern end, and elevated 742 feet. It appears as a regular pyramid from most points of view, and upon the south side of it are two promontories, the Ord and Bard heads, the former being 500 feet, and the latter about 200 feet, in height. Ander, or St. Andrews hill, at the north-east part of the island, 400 feet in height, is also a well-marked object. Cullensbro' Wick, and the secure little harbour Aith voe, are both upon the north-east side of Bressay.

Noss Island, 1 $\frac{1}{2}$ miles long, and a mile broad, is upon the east side of Bressay, being separated from it by Noss sound, and by a narrow and tortuous rocky channel, through which the tide stream runs with great rapidity. The island terminates abruptly to the eastward in Noss head, which is nearly precipitous, and elevated 577 feet above high water, from whence it slopes steeply down to the westward with great regularity, having the appearance of a wedge when seen from the south-west or north-east. A short distance to the south-west of the head is the celebrated cradle of Noss, a contrivance used for crossing a yawning chasm, which separates a small holm from the south-west point of the island.

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BRESSAY SOUND.*—The southern approach to Lerwick is between Mainland and the west side of Bressay island, and except close in at the projecting points, is everywhere free from danger. It is fully 2 miles wide and deep, and from the well-marked character of the land in its vicinity, its entire freedom from obstruction, and its easy distance from the first class light at Sumburgh head, it is by far the most accessible harbour of refuge in Shetland.

LIGHT.—The lighthouse on Bressay island is erected on Kirkabister Ness, at the east side of the entrance to Lerwick; it is built of brick coloured white, and exhibits a *revolving* light of the second order, showing *red* and *white* alternately *every minute*. It is 105 feet above high water, and visible in clear weather from a distance of 15 miles.

LERWICK, the capital of the Shetland islands, is situated upon the eastern side of Mainland, 18 miles to the north-east of Sumburgh head, and directly opposite the island of Bressay. Very little of the town is visible in the approach through Bressay sound, but after the South Ness has been rounded, it will be seen skirting the shore at the foot and on the side of a steep bank for $\frac{1}{2}$ a mile. The principal thoroughfare, running parallel with the shore, consists of an ill-paved winding footpath, there being no carriage way; and the houses, which are all of stone, have been built and placed with very little regard to regularity; deep water approaches them closely, and there are numerous convenient landing places. The old tolbooth or jail, with a small cupola, standing upon the shore, two kirks (established and free), in the higher part of the town, and the fort to the northward, are the principal objects. The latter was originally constructed in the time of Cromwell; it was partially destroyed by an enemy's frigate in 1673, and was rebuilt and named fort Charlotte in 1781; it mounts 12 guns, and commands the anchorage and its approaches.

Docks.—In the bight to the northward of the town, and to the westward of North Ness, are two small tide harbours or docks, with a depth of 10 and 7 feet in them at high-water springs, and there are from 15 to 16 feet at the quays outside; appended to them are buildings and timber slips. Ship-building is not carried on, nor is there a patent slip at Lerwick, but small repairs can be readily executed.

Exports.—Lerwick has no manufactures of any consequence, but the trade is considerable. The exports consist of cattle, fish, butter, hides, sheep, ponies, eggs, and copper and iron ore. About 5,000 tons of dried fish were exported in 1875, of which 1,204 tons were sent foreign, the remainder to England, Scotland, and Ireland, besides 1,833 barrels of herrings sent to Germany.

* See plan of Bressay sound; scale $m=2$ inches, on Admiralty chart of the Shetland isles, No. 1,118.

Imports.—The imports are timber, coals, grain, and groceries.

Trade.—In 1875, the registered shipping belonging to the port was 87 vessels of 3,933 tons, and the arrivals were 104,810 tons.

Population.—Population in 1871 numbered 3,516.

Consuls.—There are consuls or vice-consuls for France, Spain, Prussia, Holland, Belgium, Denmark, Sweden, the Hanseatic towns, and also for the United States.

Supplies.—Lerwick has no regular market, but fresh meat and other supplies can generally be obtained upon short notice. The town is ill-supplied with water from a well at the south end, and from a reservoir in the fort.

DIRECTIONS.—From abreast Mousa, N.N.E. $\frac{1}{2}$ E. for $7\frac{1}{2}$ miles leads to Kirkabister Ness, which may be easily recognized by the lighthouse. Then keep along the shore of Bressay island at a convenient distance, and after the Head of Ham has been passed, give either shore a berth of about one cable, and anchor abreast the town of Lerwick in 10 fathoms, with fort Charlotte bearing W. by S. $\frac{1}{4}$ S. Moor with the small bower to the eastward.*

CAUTION.—In working, it must be remembered that a small rock, named the Hevde Baa, with 7 feet upon it, lies out nearly half a cable's length from Nab point. A ledge also extends for 30 fathoms outside Lerwick South Ness, which is avoided by keeping Kirkabister Ness shut in by the cliffs north of it. The foul ground from Bressay island, named the Taing of Ham, is cleared by keeping Kirkabister Ness open of the Head of Ham. In addition to these inshore rocks, there is also a sunken ledge with 7 fathoms upon it, named the Sillock Baas, nearly midway in a line between the Ness of Sound and Nab point; it is to be avoided in southeasterly gales, as the sea then breaks heavily upon it.

From Seaward.—The approach to the north entry from seaward is encumbered by several obstructions. They are the Soldian rock, Green holm, and the Brethren rocks to the northward; and Boester holm, with the foul ground lying out from it, to the southward. Assuming that a vessel is in the fairway between them, and is under the necessity of using the north entry without a pilot, Rovey head must be made out and closed upon a W. $\frac{3}{4}$ N. bearing; or from a position $\frac{1}{2}$ a mile to the southward of Green holm, steer W. $\frac{1}{4}$ S. for Rovey head; the well-marked pyramidal

* There is abundant anchorage space for eight first-class ships within the South Ness, well protected from wind and sea. Mr. H. A. Moriarty, Master, R.N., H.M.S. *Revenge*, 1861.

hill, Luggies Know, will then be observed, a point on the starboard bow; and as Rovey head is neared, the entry between Green head and Belcher point will open out; steer towards it, keeping as near mid-channel as possible. The West Brethren rock, kept in sight just outside Rovey head, clears the Skibby Baa, and leads in a fairway through the remainder of the Narrows, past the point of Scotland (which is steep-to), up to the bight of Grimmister, where the vessel is in safety. Afterwards, the *black* buoys marking the Middle ground and Loofa Baa are to be left to the eastward, and the North Ness given a berth of $\frac{1}{2}$ a cable; anchorage may then be taken up abreast Lerwick.

NORTH ENTRY to LERWICK.—The north entry into Lerwick harbour is a passage about a mile in length between Mainland and the north-western part of Bressay; but being tortuous, and in some places less than a cable's length in breadth, it is only available with leading winds. The high water depth in it is from 18 to 20 feet over a bottom of sand. The obstructions in it are—the Skibby Baa, lying a cable's length from the western shore, and nearly $\frac{1}{2}$ of a mile within Rovey head, which is a low rounded point of conglomerate, steep-to, and forming the north-west boundary of the entrance; then occur ledges projecting from Scarf and Skerry, Belcher and Hogan points, all upon the eastern side; while above the latter point and the point of Scotland upon the opposite side (which together terminate the Narrows), are the Middle ground, with $7\frac{1}{2}$ feet upon it, and the Loofa Baa, which dries; each is marked by a *black* buoy upon its western side. The remainder of the channel is clear to abreast Lerwick.

TIDES.—The streams of flood and ebb run rapidly through the contracted part of the north entry, but they are scarcely perceptible in Lerwick harbour and Bressay sound, except during springs, when their rate is about 2 miles per hour. It is high water by the shore, full and change, at 10h. 30m., but the flood and ebb streams continue to run for 2 hours after high and low water. Springs rise 6 feet, and neaps 4 feet.

From Rovey head to the Brethren rocks is N.E. 1 mile, and from thence to the Mull of Eswick, N.E. $\frac{2}{3}$ N. $3\frac{1}{2}$ miles. In this district are several harbours as well as outlying dangers, which will now be described.

BRETHREN ROCKS.—Two of these rocks named the East and West Brethren are always visible; the reef on which they are based extends from them E. by N. $\frac{1}{4}$ of a mile, and is steep-to. The channel between it and Green holm is $\frac{1}{2}$ of a mile wide, with a depth of 16 fathoms. To pass through it, keep the pile on Bressay Ward just to the eastward of Boester holm, but the usual and safest passage for vessels bound to the northward is to the westward of the Brethren.

GREEN HOLM is a small grass-covered islet, 40 feet above high water, E.N.E. $1\frac{1}{2}$ miles from Rovey head, with foul ground extending from it for more than a cable to the south-west and south-east.

SOLDIAN is a small sunken rock, showing only at low water of extraordinary spring tides, lying N. $\frac{1}{4}$ W. $1\frac{1}{2}$ miles from the east extremity of Score head, and E. $\frac{3}{4}$ S. $\frac{3}{4}$ of a mile from Green holm. When there is a swell upon the coast, its position is always shown by breakers. The marks for it are, Cullensbro' Ness just shut in by Score head, and the Brethren rocks shut in by Green holm. Cullensbro' Ness well open of Score head leads to the eastward of the Soldian; the Brethren rocks, open to the southward of Green holm, lead to the southward of it; and the same rocks, open to the northward of Green holm, lead to the northward of it, but in the latter case the Nive Baas are an obstruction. The Soldian is separated from Green holm by a channel $\frac{2}{3}$ of a mile wide, with 20 to 28 fathoms in it; it is not prudent to pass through it, as the Nive Baas lie in the line of mid-channel, but if compelled to use it, keep within 2 cables of Green holm, and then proceed to the northward or north-westward.

NIVE BAAS, dangerous sunken rocks, and, like the Soldian, visible only at low spring tides, lie N.E. $\frac{3}{4}$ E. $\frac{2}{3}$ of a mile from Green holm, and N. by W. $\frac{1}{2}$ W. $1\frac{1}{2}$ miles from Score head. The Ward of Bressay in one with Green holm clears them passing to the westward, and the north-east part of Noss island open of Score head, leads to the eastward of them.

UNICORN REEF, dry at low-water springs, is the outermost of several dangers lying off Hawks Ness, a salient point separating Deals and Lax-firth voes, and bounding one side of the channel which leads to the voes situated within the ness. The reef is E. by S. $\frac{1}{4}$ S. $\frac{3}{4}$ of a mile from Hawks Ness, S. $\frac{1}{4}$ E. $\frac{3}{4}$ of a mile from the west end of Glitness islands, and S.W. by W. $\frac{3}{4}$ W. $2\frac{1}{4}$ miles from How stack. It is called the Unicorn, from the circumstance of a vessel of that name having been wrecked upon it while in pursuit of the notorious Earl of Bothwell.



Ward hill of Whalsey, open to the eastward of Frow stack, N.E. $\frac{3}{4}$ E.

To clear this danger on its eastern side, keep the Ward of Whalsey open to the eastward of Frow stack N.E. $\frac{3}{4}$ E.; and to clear it passing to the northward, keep Atlas score (a singular notch in the outline) open to the northward of Wadbister point N.W.



Atlas score, open to the northward of Wadbister point, N.W.

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No vessel should attempt to pass to the south-west of the Unicorn reef, as the space between it and Hawks Ness is encumbered by several sunken dangers, named the Baas of Hawks Ness.

GLITNESS ISLANDS, two in number, are separated from the Unicorn reef by a deep channel $\frac{3}{4}$ of a mile wide, the common entry into several voes within. The west end of the western island is $\frac{3}{4}$ of a mile to the south-eastward of Railsbro' Ness at the entrance of Catfirth voe, and West $2\frac{1}{4}$ miles from How stack. The western island is about $\frac{1}{2}$ a mile in length, the other is not more than a third of that size; both are uneven in surface, sloping to the northward, with perpendicular cliffs to the southward, on which side they are steep-to, and may be approached to $\frac{1}{2}$ a cable. The space between the islands and the main is occupied by reefs and detached rocks, through which there is a boat passage.

Within the islets and rocks, just described are several voes, which occur in the following order.

DEALS VOE.—Kibester Ness, forming the east side of the entrance to Deals voe, is N. $\frac{1}{4}$ E. $\frac{3}{4}$ of a mile from Rovey head, and W. $\frac{1}{4}$ N. $\frac{1}{2}$ a mile from the West Brethren rock. The singular pointed hill, Luggies Know, is $\frac{3}{4}$ of a mile within the ness. The voe is $2\frac{3}{4}$ miles deep in a W.S.W. direction; it is seldom used in consequence of being open to the eastward, and in the neighbourhood of better harbours. Having distinguished, and rounded Kibester Ness at the distance of a cable, the voe will be open, and a mid-channel course should be steered. In working, the south side is to be avoided, as rocks extend from it for the distance of a cable, but the north side may be approached by the lead into a depth of 7 fathoms. Anchorage may be taken up in any convenient depth. About a mile from the head of the voe, a low stony beach extends nearly halfway across from the southern shore, under the protection of which, small vessels may obtain good shelter in easterly gales, in a depth of $2\frac{1}{2}$ or 3 fathoms; but it is necessary in passing it, to keep the north shore well aboard, to avoid a flat which extends from the east and north-east sides of the beach.

LAXFIRTH VOE.—Hawks Ness separates Deals voe from Laxfirth voe, another inlet seldom used except by native vessels, though it affords better shelter than the former. How stack kept on with the west end of West Glitness island for $\frac{3}{4}$ of a mile, leads to the entrance of the voe, which extends W.S.W. for $2\frac{1}{4}$ miles. A berth may be taken up in any convenient depth, as the voe is free from danger, but the best anchorage is about halfway up in 7 fathoms, with Railsbro' Ness and Wadbister Ness, in one, N.E. $\frac{3}{4}$ N., and the south cliffs of Glitness islands open of Hawks Ness, E. by N. $\frac{3}{4}$ N. Above this position the depths decrease, and the channel begins to contract.

WADBISTER VOE.—Wadbister Ness separates Laxfirth and Wadbister voes, the latter harbour being $1\frac{1}{2}$ miles deep in a westerly direction; it is obstructed at its entrance by a rock lying nearly in mid-channel, with only 7 feet upon it, and 5 and 6 fathoms close to it. Being off the west end of Glitness islands, and intending to enter Wadbister voe, steer for a fair berth outside Railsbro' Ness, and having passed it, bring the west end of Glitness islands on with Railsbro' Ness, and keep them so while crossing the mouth of Catfirth voe, until the bluff head abreast Burnthammersland house is shut in upon the land to the south of it, or until the vessel has arrived at the distance of $1\frac{1}{2}$ cables from Burnthammersland Ness. The north side of the voe, which is steep-to, is then to be kept close aboard until Hawks Ness is shut in by Wadbister Ness, when mid-channel is to be kept, and land-locked anchorage taken up, when convenient, in 10 or 11 fathoms.

CATFIRTH VOE, the innermost voe of this section of coast, and the head of the inlet, though inferior to Dourye voe a little farther to the northward, is yet, in some respects, one of the best harbours upon the east coast of Shetland, being comparatively easy of access, and possessing clear shores and land-locked anchorage, and a capacity sufficient for any accommodation likely to be required. It is specially available when the north entry to Lerwick cannot be attempted without risk, and it has also frequently afforded shelter to vessels embayed to the northward of Bressay and Noss in south-easterly gales, for there is no difficulty in entering it after its position has been ascertained.

The entrance to Catfirth voe is bounded by Wadbister Ness and Burnthammersland Ness to the westward, and Railsbro' Ness to the eastward; a clear passage $\frac{1}{2}$ a mile wide, and having a general depth of 20 fathoms. In the channel within Railsbro' Ness, but rather bordering towards the eastern shore, is a small mussel bank with 25 feet upon it, and 7 fathoms surrounding it; the marks for it are, the Ward of Bressay on with the western side of Railsbro' Ness S. $\frac{1}{4}$ W., and Catfirth house on with the western bluff of a small peninsula projecting from the north-eastern side of the voe. Catfirth house, kept midway between this bluff and the northernmost bluff of Burnthammersland Ness, leads to the westward of the bank.

DIRECTIONS.—In entering the voe from abreast Glit Ness islands, steer N.W., for Railsbro' Ness, and after it has been passed, the same course is to be continued until Kibester Ness and Hawks Ness are in one; the course must then be altered to N. $\frac{1}{4}$ E., and Catfirth house kept in sight. Having arrived abreast Burnthammersland house, haul over to the eastward until Kibester Ness is on with the west extremity of Railsbro'

Ness; and when in mid-channel, anchorage may be taken up in 10 fathoms, with Burnthammersland house bearing N.W. by W. $\frac{1}{4}$ W., and Railsbro' house E. by S. $\frac{1}{2}$ S.

If intending to remain longer than a day, proceed farther up the voe, keeping a cable from the western shore; and having rounded the north part of Burnthammersland Ness, haul to the westward until it appears in one with Railsbro' Ness, and Railsbro' house is on with the south bluff of the peninsula already adverted to; here there is secure anchorage in 8 fathoms. Should the loss of anchors render it necessary, the vessel may be laid ashore at the head of the voe upon soft mud.

HOW STACK, a bold pyramidal rock, and a prominent object from every direction, is N.E. $\frac{1}{4}$ E. $3\frac{1}{4}$ miles from Rovey head, and North $6\frac{1}{2}$ miles from the north-east point of Ness island, while the entrance com-



How stack, W. by N. $\frac{1}{4}$ N. 2 miles.

mon to Laxfirth, Wadbister, and Catfirth voes, between Glitness islands and Hawks Ness, bears from it W. $\frac{1}{4}$ S. $2\frac{1}{2}$ miles. The stack, about 40 fathoms in length and breadth, is steep nearly all around; its summit and north-western slope is covered by grass, sufficient for the support of a few sheep. A reef, always partly visible, extends 40 fathoms from its eastern end, and may be approached to the distance of 2 cables.

Vessels, whether from the northward or southward, bound to Deals, Laxfirth, Wadbister, or Catfirth voes, should endeavour to make How stack, and take a departure from it, for its bold and marked character renders it easily distinguishable even in thick weather. If from the northward, pass south of the stack, when a W. $\frac{1}{4}$ S. course for $2\frac{1}{2}$ miles will lead to the entrance between Glitness islands and Hawks Ness. If from the southward, How stack should not be brought to the eastward of North, until the west end of Glitness islands bears N.W. $\frac{1}{4}$ W. or N.W. by W. $\frac{1}{4}$ W. according to the wind, when the latter may be closed.

SNACKA, a reef always above water and steep to on all sides, is E. $\frac{1}{2}$ N. $\frac{1}{4}$ of a mile from How stack; the depth in the intervening channel varies from 10 to 20 fathoms. In approaching from the eastward, it is necessary, in order to clear the Snacka, to avoid running in with How stack upon a West bearing.

The bay between Glitness islands and the Mull of Eswick has several outlying dangers, and one reef near the middle is always above water. The north voe of Glitness, a small harbour occasionally used by the native vessels, is protected by a long point stretching out from the west side of the bay.

The **MULL of ESWICK** is a bold promontory of mica slate, and is steep-to; it is fronted by a detached mass named the Frow stack, already used as a clearing mark for the Unicorn reef, and also by the Hevde skerry, lying out a short distance from its north-east extremity.

STEPPING STONES.—A succession of reefs and skerries extend in a curved form from the Mull of Eswick for several miles to the eastward, and as they occur with some degree of regularity, they are not inaptly termed "The Stepping Stones." They are six in number, and are named the Inner, Middle, and Outer Voders, Little Billian, West Fladdecap or Muckle Billian, and East Fladdecap. The three westernmost are covered at high water, but are generally easily distinguished by the break of the sea upon them; the others are always visible. The channels between these dangers are deep, varying from 13 to 32 fathoms at low water.

Inner Voder is East $\frac{1}{2}$ a mile from the north extremity of the Mull of Eswick; it is barely covered at high water, and there is a depth of 9 fathoms close to it on all sides. The mark to pass through the channel between the Inner Voder and the Mull of Eswick, is the summit of the Ward of Bressay over the highest part of How stack S.S.W. $\frac{1}{4}$ W., or the gap between Hog island and the Hog of Neap open N.E. $\frac{1}{2}$ N.

Middle Voder is E. by S. 3 cables from the Inner Voder; this rock is small, and visible only at low-water springs.

Outer Voder, covered at half-flood, is E.N.E. 4 cables from the Middle Voder. In case of necessity, the channel between them may be used by keeping the outer extremities of Stava Ness and Hog island in one N. by E. $\frac{1}{3}$ E.

Little Billian, E. by S. $\frac{1}{2}$ S. $\frac{3}{4}$ of a mile from the Outer Voder, and N.E. by E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from How stack, has 12 fathoms close to it, and is never entirely covered; the portion visible at high water appearing like a small boat. Half a cable S.W. by W. $\frac{1}{4}$ W. from the Little Billian is another rock, showing at low-water springs, which is cleared, passing to the southward, by keeping East Fladdecap open its own apparent breadth to the southward of West Fladdecap N.E. by E. $\frac{1}{2}$ E.

West Fladdecap, or Muckle Billian, is E. by N. $\frac{1}{2}$ N. rather more than a mile from the Little Billian, and from it Whalsey Ward bears N.N.E. $\frac{1}{4}$ E. This rock is rugged, and being 34 feet above high water

is a prominent object at all times; West Fladdecap, W. by N. $\frac{3}{4}$ N. 1 mile. there is a depth of 9 fathoms within $\frac{1}{2}$ a cable of it in every direction. As the channel west of West Fladdecap is thus marked on each side by rocks visible at all times, no particular directions need be given, except

78 SHETLAND. —HUMBURGH HEAD TO LUNNA HOLM. [MAP.]

that should heavy weather prevent the *Little Ellen* being distinguished, the West Fladdecap must be kept close aboard.

West Fladdecap, the last of the *Stepping Stones*, lies N.E. by E. $\frac{1}{4}$ E. a cable from West Fladdecap; it is elevated 25 feet above high water, and is a flatter rock than West Fladdecap, more easily distinguished from it. A reef, **East Fladdecap**, W. by N. $\frac{1}{4}$ N. 1 mile

partly dry at low water, extends from it East for $\frac{1}{4}$ of a mile; the north-west side is also shallow, a depth of 24 feet being found at the distance of 100 fathoms in that direction; the other sides are steep-to. A detached broken rock, with only 15 feet water upon it, lies W.S.W. $\frac{3}{4}$ S. 2 cables from East Fladdecap, and obstructs the channel between the two Fladdecaps, which therefore cannot be recommended; but in case of necessity, pass within 4 cables of West Fladdecap.

The various passages between the *Stepping Stones* lead to the channels to the westward of Whalsey, and also to Dourye voe, a capacious and well sheltered harbour, which will shortly be described; but the courses and distances from object to object in the several tracks will be better obtained from the chart.

TIDE. From the north entry to Lerwick to the *Stepping Stones*, the flood stream continues to run to the southward until two hours after high water by the shore.

NESTING BAY—HOG ISLANDS, &c.—Nesting bay, contained between the Mull of Eswick and the Hog of Neap, about $1\frac{1}{2}$ miles wide and deep, has no good anchorage in it, the depths being great, and the space unnumbered with several sunken and other dangers. The *Clinning*, the northernmost of these dangers, lies N.N.E. $\frac{1}{2}$ E. $\frac{1}{2}$ a mile from the north-east extremity of the Mull of Eswick; it has an extent of 2 cables in an N. by N. and W. by S. direction, and part of it is always above water. The gap between Hog island and the Hog of Neap, kept open on a N. by N. bearing (the mark for leading through the channel within the Inner Voe), clears this danger passing to the south-eastward. The point named the Hog of Neap, and Hog Islands, form together the north-east boundary of Nesting bay, and also the west side of the broad and deep channel leading to Dourye voe, and to the passages within Whalsey. A little within the Hog of Neap, on the summit of a sharp well defined hill, is Neap manse, which is a very prominent object from the offing.

DOURYE VOE, the largest, safest, and easiest of approach of all the harbours upon the east side of Shetland, has its south-east boundary at Stoven Ness, N. by E. $\frac{1}{4}$ E. $1\frac{1}{4}$ miles from the east point of Hog island.

Its entrance may be considered as between Stava Ness and Under holm, which are $1\frac{1}{2}$ miles apart; from hence, the voe extends N.W. by W. for 3 miles, with a general depth of not less than 20 fathoms; it then turns abruptly to the southward for more than a mile, and receives the name of Gruna voe; this part is the usual anchorage.

The whole of the north side of Dourye voe is composed of cliff of varying height; that of Levenip, nearly $1\frac{1}{2}$ miles to the westward of Under holm, is a well-marked object. After Levenip, the shore, trending N.W. (westerly), is nearly straight, and may be approached to within $1\frac{1}{2}$ cables. About midway between Under holm and Levenip, and rather outside their line of bearing, are two sunken patches, named Gruna reef, with $4\frac{1}{2}$ and 5 fathoms upon them, and 18 to 30 fathoms about them. In moderate weather they do not form any obstruction, but they must be carefully avoided in southerly gales, on account of the heavy sea which then breaks upon them. The southern side of Dourye voe has neither so regular an outline, nor is it so free from danger as the north side. Several bays indent the shore between Stava Ness and Gruna voe, and at $1\frac{1}{2}$ miles within Stava Ness is the green islet Ballister holm, and, $\frac{1}{2}$ a mile farther, Swarta skerry; the latter may be approached closely upon its north side, but foul ground extends from Ballister holm, and a berth of a couple of cables must be given it; if working, keep the east point of Gruna voe open to the northward of Swarta skerry. Between Ballister holm and Swarty skerry, and the south-west shore of Dourye voe, are numerous rocks which show at low water.

Within Ballister holm is Ballister voe, an anchorage often used by the native vessels, for its convenient position near the outer part of Dourye voe. The entrance into it is between Colliefield Baas and the ledge extending from Colliefield Ness to the south-east, and Ballister holm to the north-west, the best water being about midway between them. There is a depth of 5 fathoms at the anchorage a short distance within; but the available space is very confined, and should only be used on an emergency, or by those well acquainted with it.

Water of an inferior quality may be procured from rills upon the west side, and at the head of Dourye voe, and other supplies in small quantities from the adjoining hamlets.

DIRECTIONS.—In approaching Dourye voe from any of the channels between the Stepping Stones, care must be observed to avoid the dangers lying out from the south-west side of Whalsey (an island which will shortly be described). Having passed these, entrance is easy; with a leading wind, proceed up the middle of the voe until Gruna voe opens; and when rounding into the latter, give the east point a berth of a couple of cables,

to avoid an off-lying rock which dries at low-water springs. The west side of Gruna voe may be approached closely, and the east side to $1\frac{1}{4}$ cables; and having proceeded so far up it as to have Levenip cliff shut in by the east point of the voe, and being rather nearer the western shore, let go the anchor in 10 fathoms; this position has good holding ground, and is besides hand-locked.

WHALSEY ISLAND covers Dourye voe to the eastward, and is the largest of a cluster of islands and islets which here extends in a general east direction for 11 miles from the main group of the Shetlands. Whalsey lies E.N.E. and W.S.W., has a compact outline, and is 5 miles long and $1\frac{1}{2}$ miles broad. The Ward of Whalsey, already used as a clearing mark for the Unicorn reef, is a sharp well-defined hill, 376 feet high, near the south-west extremity of the island; and a short distance to the north-west of it is Symbister, an imposing mansion, and the residence of the proprietor. The shores of Whalsey are generally free of dangers at 2 cables, with the following exceptions. About the middle of the north-west side of the island is Kirk Ness, on which stands a kirk, and which forms one of the boundaries of the north-east entry into Whalsey sound; N.E. $\frac{1}{4}$ N. $\frac{1}{4}$ of a mile from the ness is a rocky ledge, named the Kirko Baas, with only 3 feet upon it, and 2 to 3 fathoms within it. The next danger is the Skate of Morrister, a flat ledge lying a cable from the island about the middle of Whalsey sound, and abreast Morrister house; it dries at half-ebb, its position at high water is well marked by the rippling of the tide over it. The last danger lies $\frac{1}{2}$ a mile from the south-west side of the island, between Symbister Ness and Clett head; it consists of two ledges, named the Flessinge of Sandwick and Sava skerry; they are always above water, and they bound the south-eastern approach to Dourye voe: they must be carefully avoided. Sava skerry, the southernmost of the two, and the turning point, bears S.W. by W. $\frac{3}{4}$ W. from the centre of Clett holm.

Symbister Bay is upon the south-west side of the island, just to the northward of Symbister Ness; here vessels may stop a tide during the summer, but it is unsafe in winter, when the days are short, and gales of frequent occurrence. To enter it, pass close round Symbister Ness, and having opened the houses at the head of the bay, steer for them, and anchor out of the stream of tide, in 4 fathoms, sandy bottom. The bay is small, being not more than $1\frac{1}{2}$ cables in breadth.

WHALSEY HOLMS is the name given to the islets and rocks lying off the south-east side of Whalsey. They are as follows:—The Hogo Baas, three sunken patches, with only 6, 9, and 10 feet upon them, and with 25 to 30 fathoms surrounding them, lying S.E. by E. $\frac{1}{4}$ E. from 1 to

$1\frac{1}{2}$ miles from the high bluff Clett head ; their position is marked in gales by the break of the sea. Ungle skerry, a small conical rock, always a few feet above water, N.E. by E. $\frac{3}{4}$ E. nearly a mile from Hogo Baas ; from it Clett head bears W. $\frac{3}{4}$ N., on with a point to the eastward of it ; and Skaw Taing point, the north-east extremity of Whalsey, N.E. $\frac{1}{4}$ N. Nacker skerry, a large barren rock, $\frac{1}{2}$ a cable long and broad, nearly $\frac{1}{2}$ a mile South of Skaw Taing point, with deep water between.

[**Wester, Muir, and Isbister Holms**, a short distance to the south-west of Nacker skerry, are nearly connected by rocks which dry at low water ; collectively, they are about a mile long, and lie $\frac{3}{4}$ of a mile from the shore of Whalsey. Garda Baas are two rocky patches, lying S.E. $\frac{1}{2}$ S. $\frac{3}{4}$ of a mile from Nacker skerry, and East $\frac{1}{2}$ a mile from Nester holm ; they have 15 to 21 feet over them, with 17 fathoms between and about them, and they form a salient point of the channel between Whalsey and the Out skerries. The channel separating them from the Out skerries, is 2 miles wide and 20 fathoms deep.

East Linga, the largest of the Whalsey holms, has a hummock near its centre, and the surface of the islet rises from the south towards the north ; it is $\frac{1}{2}$ a mile long N.E. by E. and S.W. by W., and 2 cables broad ; as it is the innermost of the cluster, it needs no further description. Rumble holm, the south-westernmost of the group, lying E.S.E. $2\frac{3}{4}$ miles from Clett head, and E. $\frac{1}{2}$ N. rather more than $2\frac{1}{2}$ miles from East Fladdecap, is about 2 cables in length, and 1 cable in breadth, and is rugged and bold. It is used as a station by the fishermen during the season, who here find shelter for their boats at a convenient distance from the fishing ground, and accommodation for themselves in some huts which they have built. A narrow reef, named the Flessinge of Rumble, having some of its rocks always above water, lies $\frac{1}{4}$ of a mile from the north-east point of Rumble holm.



Grief and Swarta skerries, N.W. by W. $\frac{1}{4}$ W. 1 mile.

Grief and Swarta Skerries are the last to be noticed ; they are the south-easternmost or outermost of the cluster. The former is $\frac{1}{4}$ of a mile in length, and 2 cables in breadth ; it may be readily known in hazy weather by a stone beacon standing on the highest point of the rock. Swarta skerry, $1\frac{1}{2}$ cables to the south-east of Grief skerry, is a dark looking rock, more than a cable over, with a smaller rock near it, both showing above water at all times ; from them Garda Baas bear N. $\frac{1}{2}$ E. 2 miles, the Swabe stacks (the westernmost of the Out skerries) N.E. $\frac{1}{2}$ N. $3\frac{1}{4}$ miles, and Noss head S.W. $\frac{1}{4}$ S. $12\frac{3}{4}$ miles.

DIRECTIONS.—As a general rule, vessels in south-easterly gales should avoid becoming entangled between Whalsey and its holms, for although the water is deep, the risk would be great either of being driven upon Whalsey, or of getting into the broken water of Hogo Baas. Should a vessel be necessitated to take this passage, it would be advisable to keep within $\frac{1}{2}$ a mile of Whalsey, diminishing the distance to $\frac{1}{4}$ of a mile abreast Clett head, which having passed, the way to Dourye voe is open. The mark to clear Garda Baas passing to southward, is Rumble holm, kept shut in by East Linga S.W. $\frac{3}{4}$ W.; and the fishermen's beacon on Grief skerry, kept to the westward of S.S.W. $\frac{3}{4}$ W., clears them passing to the eastward. The highest part of Rumble holm, bearing E. $\frac{3}{4}$ S., leads to the southward of Hogo Baas; and Clett head, N.N.W. $\frac{1}{4}$ W., clears them passing to the westward. Having passed these dangers, or having passed through any of the channels between the Stepping Stones; and being bound to Dourye voe, or through either of the sounds leading to the northward, be careful to avoid the Flessinge of Sandwick and Sava skerry, lying off the south-west part of Whalsey; they are above water, as above stated, and will generally be seen; but should they not be distinguished, Grief skerry, kept open of Whalsey, will lead to the southward of them, and Whalsey sound kept open clears them passing to the westward.

ISLETS upon N.W. side of WHALSEY.—In the channel between Whalsey and Mainland, are several islets and rocks having available passages between them.

Great Linga, the largest of these islets, is separated from Whalsey by Whalsey sound. The general direction of Great Linga is N.E. $\frac{1}{4}$ E. and S.W. $\frac{1}{4}$ W.; it is $1\frac{1}{2}$ miles long, and less than $\frac{1}{2}$ a mile broad; its west, north-west, and south-west sides being foul, no vessel should approach them; the south-east side is steep to within $\frac{1}{2}$ a cable; the east shore towards the north end is skirted by a rocky flat $1\frac{1}{2}$ cables in breadth, which may be approached into 7 fathoms.

Wester Holm, is a small islet at the north-east end of Great Linga, and separated from it by a channel 2 fathoms deep; it should have a berth of at least a cable in passing.

Little Linga, **Scot Holm**, and **Swarta Skerry** are all connected, and based on a rocky flat upon the north-west side of Great Linga, from which it is divided by a narrow and unsafe channel. Vessels should avoid getting into the stream of this group, as the flood-stream sets right upon it.

Bruce Holm, Little Holm, and some outlying rocks, rest on another flat upon the south-west side of Great Linga. The two flats form the eastern boundary of West sound.

Under Holm, the last islet, lies at a short distance to the south-east of Dragon Ness; the channel between them, $1\frac{1}{4}$ cables in width, constitutes the southern part of West sound, while a channel $1\frac{3}{4}$ cables in breadth separates Under holm from Bruce holm. For the latter passage there are no thwart marks, and the narrower channel to the westward of Under holm is that generally preferred. About $\frac{1}{3}$ of a cable from the west side of Under holm is a rock showing at low water, but there are 11 fathoms close to it; the south and south-east sides of the islet are bold-to in 15 fathoms, but the north-east end shelves off for $1\frac{1}{4}$ cables, and then suddenly falls into 20 fathoms.

WHALSEY SOUND—WEST SOUND, &c.—Whalsey sound, the channel commonly used by vessels of burden, and the only one available for working in, is contained between Whalsey and Great Linga, and is about 2 miles long N.E. and S.W., and $\frac{1}{4}$ of a mile wide. The obstructions in it, (which have already been described,) are the Skate of Morrister and Kirko Baas on the Whalsey side, and a rocky flat projecting from Great Linga, on which are two rocks always visible.

West sound is bounded by the shore of Mainland to the westward, and the several small islets just described to the eastward. This channel is very narrow between Mainland and Under holm, but it is clear to within a moderate distance from the sides.

DIRECTIONS.—Both flood and ebb streams run strongly through these channels, the rate through West sound amounting at times to 5 or 6 knots an hour, so that in using them it is necessary to be somewhat certain of carrying a commanding breeze, for the occurrence of light or baffling winds, after the channels have been entered, is not unattended with danger. Vessels bound through Whalsey sound, and being abreast Symbister Ness, should steer so as to pass within $\frac{1}{2}$ a cable of the south-east side of Great Linga, and continue along the same shore until Neap manse is on with the south-east side of Great Linga S.W. by W., which is the leading mark through the sound, and is to be continued for about 2 miles, when Skaw holm will appear open of Challister Ness, and the sound is cleared; then N. by E. $\frac{1}{4}$ E. $4\frac{1}{2}$ miles will lead to Lunna holm at the entrance of Yell sound, from whence to Snap point, the south-east extremity of Fetlar, the course is N.E. $\frac{1}{2}$ E. $12\frac{1}{2}$ miles.

A rock, named the Baa of Weather holm, with 20 feet upon it, and 8 fathoms close around it, lies E. by N. $\frac{2}{3}$ N. $\frac{1}{2}$ a mile from Weather holm; it is avoided by keeping Neap manse clear of Great Linga island.

In working, the manse on with the south-east point of Great Linga, or Hog islands well open of Symbister Ness, will lead outside the Skate of Morrister; Symbister Ness showing clear of the west side of Whalsey S.W. $\frac{1}{2}$ W. clears the Kirko Baas on their west side, and the Skerry of Skaw well open of Challister Ness E. by S. $\frac{1}{4}$ S., clears them passing to the northward.

The West sound is so narrow, and the tide streams in it are so rapid, that it is only a safe passage with a leading and commanding breeze. When abreast Under holm, keep Luning head shut in by Dragon Ness to clear the rock which lies out a short distance from the south-west side of that island; afterwards, as Dragon Ness and the adjoining shore are steep-to, keep within $\frac{1}{2}$ a cable of them; and the sound will be cleared when Whalsey kirk is open of Weather holm, bearing S.E. $\frac{1}{4}$ E.

CAUTION.—In using the West sound, it must be remembered that the flood stream sets strongly across the shelving north-east end of Under holm. If intending to pass through the channel to the eastward of Under holm, keep rather upon the eastern side towards Bruce holm and the rocks adjoining it to the northward.

OUT SKERRIES.—The outermost of the Whalsey group, with some detached rocks lying to the north-west of them, are collectively named the Out Skerries, from their advanced position as the easternmost of the Shetlands. There are six distinct clusters, but the principal islets are Gruna, Brury, and Housey, lying in close connection, and nearly East and West from each other.

GRUNA ISLAND.—Gruna, the outermost islet, is about $\frac{1}{2}$ a mile in length, and $\frac{1}{4}$ of a mile in breadth, having upon its east side five large rocks, the outermost of which, Bound skerry, is the easternmost rock of the Shetland group. Between Gruna and the islands to the westward is a small inlet or harbour, with 9 feet the least depth into it; it is frequently used by the native vessels and those conveying supplies to the lighthouse, and for whose convenience moorings have been laid down; but as the entry is too intricate to admit of a stranger attempting it, except under the guidance of a pilot, further description is needless.

LIGHT.—Gruna lighthouse is built on Bound skerry; it is coloured white, and shows at an elevation of 145 feet above high water a *white* light of the first order, *revolving* once *every minute*, and visible in clear weather from a distance of 17 miles.

From Bound skerry, Noss head and Sumburgh head are nearly in line S.W. $\frac{1}{4}$ W. at the distance of 20 miles and 38 miles respectively; while to the northward, the east point of Fetlar and Balta island are also nearly

on one bearing, N. by E. $\frac{1}{2}$ E. 11 and 19 miles distant. There is a depth of 40 fathoms within $1\frac{1}{2}$ cables of Bound skerry, and the whole margin of Gruna island and the rocks surrounding it may be approached to within the last-mentioned distance.

Brury and Housey Islets are (as before mentioned) closely connected with Gruna. Mio Ness, the western point of Housey, is about 2 miles from Gruna. Both these islets are moderately elevated and have irregular outlines, with several deep passages and inlets; they are generally bold, and may, with their outlying rocks, be approached as near as 2 cables.

Benelips are a small cluster of high islets and rocks a short distance to the S.S.W. of Mio Ness; they are clear at a cable's length.

Filla, Guens, and Swabe Stacks, form another cluster $\frac{1}{2}$ a mile to the westward of the Benelips. The Swabe stacks, two high perpendicular rocks, are well marked objects, and have a depth of 15 fathoms within a cable. The two narrow passages formed by these groups are named Benelip and Filla sounds.

Vongs, Little, and Muckle Skerries, are three detached masses, averaging from 30 to 40 feet above high water; they lie from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles to the north-westward of Housey, and all have detached rocks about them; they should not be approached nearer than $\frac{1}{2}$ a mile. Muckle skerry is N.W. by W. $\frac{1}{4}$ W. 3 miles from the north-east part of Housey, N.N.E. 6 miles from Grief skerry, and E. by N. $\frac{3}{4}$ N. 6 miles from the north-east entry of Whalsey sound.

DIRECTIONS.—Both Benelip and Filla sounds may be safely used by keeping in mid-channel. The broad and deep channel between Swabe stacks and the holms of Whalsey is particularly available for vessels caught between the latter islets and the Out skerries; in this case, a course should be steered so as to pass within $\frac{1}{2}$ a mile of Swabe stacks, to avoid Garla Baas. Being abreast the Swabe stacks, which are easily recognised, the course must then be altered so as to obtain the shelter of the Out skerries of Whalsey, or of any of the neighbouring harbours, as most convenient.

CAUTION.—It is imprudent to navigate by night among the Out skerries and the dangers in connexion with them; but during daylight, and with moderately clear weather, there is no difficulty—the heavier the sea, the more distinct are the dangers, for all rocks in a less depth than 10 fathoms, have broken water over them in the gales common upon this coast.

VIDLON VOE.—The shore from West sound continues bold, rugged, and free from danger to Luning head, from whence its direction changes abruptly from north-east to north-west, and so continues for a mile to the sloping point named Catness Taing, between which and the point of Lunna, is the entrance to Vidlon voe. The approach to this secure harbour, which is often used by the native vessels when unable to save daylight or the flood stream through Whalsey or West sound, is quite unobstructed; but caution must be observed in rounding Catness Taing, as a small rock lies $\frac{1}{2}$ a cable from it. The entrance, altogether $\frac{1}{2}$ a mile wide, is contracted by several rocks extending out from the western shore; they are always above water. The largest and easternmost, named Voe skerry or the skerry of Lunna, has 6 fathoms close to it; but there is a sunken rock lying 30 fathoms to the southward of it. From the entrance, the voe continues with an irregular breadth S.W. by W. for $1\frac{1}{4}$ miles; about midway some sunken rocks, named the Backs, the extremity of the foul ground from the point where the contraction of the voe takes place, materially reduce the working breadth.

DIRECTIONS.—In entering this voe with a leading wind, and having passed Catness Taing, keep within a cable of the eastern shore. If working and standing to the north-west, keep Swarta skerry near Lunna Ness in sight, which will clear the sunken rock near Voe skerry, and also the Backs and the foul ground in connexion with them. The eastern shore may be approached into a depth of 8 fathoms, or to the distance of $\frac{1}{2}$ a cable. If intending to remain for a tide only, anchor before arriving at the contracted part of the voe, in 10 to 11 fathoms, mud, with Swarta skerry on with Catness Taing; but for a longer stay, it is better to proceed farther up, and anchor in any convenient depth: the soundings decrease gradually towards the head of the voe. A swell sets in during north-easterly and easterly gales, but not to such an extent as to interfere with the security of the anchorage.

LUNNA NESS is the extremity of a peninsula 6 miles long, which projects from Mainland in a N.E. by E. direction, and forms the eastern defence of Yell sound. The whole of the south-eastern face of the peninsula from Vidlon voe, (abreast the entrance to which it is contracted to a narrow neck only 260 yards broad,) is free from danger and steep-to, there being 26 fathoms within $\frac{3}{4}$ of a cable of the shore. About midway among the hills near the shore, is a remarkable isolated rock, named the Mare of Lunna; this massive block stands out in bold relief from the ground on which it rests, and assumes the appearance of a house when seen from a distance in the offing.

SWARTA SKERRY, &c.—There are several outlying skerries and islets near Lunna Ness. The first is Swarta skerry, about $\frac{1}{2}$ a mile to the south-east of the ness, and used as a mark for Vidlon voe. This rock is always above water, and may generally be seen at a distance of 3 or 4 miles. Within less than $\frac{1}{4}$ of a mile to the south-eastward of it there is a depth of 50 fathoms. In connexion with it is a small rock always visible, a cable distant from its east side. Both may be safely approached within 2 cables. The next is Lunna holm, an islet off the pitch of the ness, about $\frac{1}{4}$ of a mile in length, and 2 cables in breadth. The channel between it and Lunna Ness is foul, and only fit for a boat passage. The last is Lunga skerry, 2 cables to the south-east of Lunna holm; it is a small black rock always above water, and clear at the distance of a cable.

The passage between Lunna holm and the skerries is free from danger, and is often used in off-shore winds; but, under general circumstances, when bound into and out of Yell sound, it is better to pass outside the latter, so as to ensure a stronger tide-set, and to avoid getting entangled among the rocks in light winds.

CHAPTER II.

SHETLAND.—LUNNA NESS TO THE SCAW, INCLUDING YELL SOUND.

VARIATION IN 1876.

Lunna Ness	-	- 21° 50' W.		Scaw	-	- 22° 0' W.
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YELL SOUND, a strait 13 miles in length, and with an irregular breadth of 3 miles, dividing Mainland from the island of Yell, has its southern entrance abreast Lunna Ness; and as it is a channel frequently used by the native vessels in proceeding from the east to the west coast of Shetland, and also by the whalers after completing their crews at Lerwick, it will be described here, before continuing the description of the eastern coast.

The body of the sound throughout is occupied by many holms, skerries, and rocks, which will be first described, and directions given for sailing between them and through the sound, and then the various voes which indent either shore of the sound will be taken in rotation.*

CLOA ROCK.—The south-eastern entrance to Yell sound is between Lunna holm, and Muckle skerry near the south-eastern point of Yell island, the skerry bearing from the holm N.E. $\frac{3}{4}$ N. 2 miles. The depth near the southern shore varies from 30 to 36 fathoms, decreasing towards the north side to 24 and 18 fathoms; but two-thirds the distance across from Lunna holm, and rather more than $\frac{1}{2}$ a mile to the south-west of the skerry, is Cloa rock, with only 2 fathoms upon it, and over which the sea breaks violently in boisterous weather. The cross marks for it are, the Stanyard rock on with a black gap in the cliff near the Horse of Burra voe N.N.E., and the Brough of Copista, a ruined Pictish castle, on with the north point of Urphacy island N.W. by W. $\frac{3}{4}$ W.

GREEN HOLM and **BURGA SKERRY** are off the southern shore of Yell island, $1\frac{1}{4}$ miles to the westward of Muckle skerry, and between the harbours Burra voe and Hamna voe. The holm is $\frac{1}{2}$ a cable long and 40 yards broad, and is separated from the shore by a channel with 15 feet in it at low water: a small rock, always above water, lies $\frac{1}{2}$ of a cable from its north-east point; and $\frac{1}{2}$ a cable farther in the same direction, is a rocky patch which dries at low water, and is in the way of vessels entering

* See Admiralty chart of Shetland islands, No. 1,118; scale, $m = 0\cdot5$ inches. Also Admiralty general chart of the North sea, from the Channel to the Norway sea, No. 2,389; scale, $d = 8\cdot0$ inches.

Burra voe. Burga skerry, S.W. $\frac{1}{2}$ S., 2 cables from Green holm (in which space there is a depth of 5 and 6 fathoms), and W. by N. $\frac{1}{2}$ N. $1\frac{1}{4}$ miles from Muckle skerry, dries at half-tide, but its position, when covered, is generally marked by a ripple or break, except in very calm weather. Flats, with $2\frac{1}{2}$ and 3 fathoms upon them, extend from the north-west and south-east sides of the skerry, which is greatly in the way of vessels rounding Muckle skerry and bound to Hamna voe.

URPHACY ISLAND is also off the southern end of Yell, and bounds the west side of the approach to Hamna voe; it is 3 cables long, and $1\frac{1}{2}$ cables broad. The channel between it and Yell has a depth of 8 and 9 feet. The island is foul upon all sides, and must not be approached nearer than 2 cables. A rock, always above water, lies $\frac{3}{4}$ of a cable from its east side; and $1\frac{1}{2}$ cables from the south point is Yell Baa, a patch of rock, the weeds on which show at low water; it is connected to Urphacy by rough ground, with an average depth of $3\frac{1}{2}$ or 4 fathoms upon it. Another patch of rock, with $2\frac{1}{2}$ fathoms upon it, lies W. by N. $\frac{3}{4}$ N. $\frac{1}{2}$ a mile from the south-west point of Urphacy, and N.N.E. $\frac{3}{4}$ of a mile from Great Rumble rock; close to it is a depth of 7 fathoms, and in gales of wind its position is marked by breakers.

RUMBLE ROCKS, the principal danger in navigating Yell sound, from their position midway in one of the main channels of the sound, and from the rapid tide which sweeps past them, are W.S.W. $\frac{2}{3}$ of a mile from the south-west point of Urphacy, West 3 miles from Muckle skerry, and N.W. $\frac{1}{4}$ W. $2\frac{1}{2}$ miles from Lunna holm. They are two in number, lying north and south of each other, more than a cable apart: the northern one, Great Rumble, is for the most part covered at high-water springs; Little Rumble appears only at low water: between them is a depth of 4 to 5 fathoms. A prominent beacon on the Great Rumble would be an advantage to navigation, for under certain circumstances of light it is difficult to distinguish the summit of the rock, and the break of the sea upon it is sometimes but little marked from the foam of the passing tide, which sets, whirls, and overlaps confusedly in this portion of the sound.

FISH HOLM is W. by N. $\frac{3}{4}$ N. $2\frac{1}{2}$ miles from Lunna holm, and S.W. $\frac{1}{4}$ W. $1\frac{1}{2}$ miles from Urphacy; it is $\frac{1}{2}$ a mile long in a N.E. and S.W. direction, and one cable broad, and its shores may be approached to $\frac{1}{2}$ a cable, except to the south-westward, where foul ground narrows and renders unsafe the channel between itself and Linga.

STOURA BAA is a patch of rock with 2 fathoms over it, lying between Fish holm and the west shore of Lunna Ness, West 2 miles from Lunna holm; the mark for it is, the Mare of Lunna on with Ultrabister house S. by E.

LINGA ISLAND is $\frac{1}{2}$ a mile to the westward of Fish holm, and about midway between the latter and Firths Ness, on the shore of Mainland. Its direction is N. by E. $\frac{3}{4}$ E. and S. by W. $\frac{3}{4}$ W. ; length $\frac{1}{2}$ a mile, and breadth $\frac{1}{4}$ of a mile. Its shores, though rocky, may be approached within a cable upon the north, north-west, and south sides. A ledge extends from its south-east side in an E.N.E. direction for $\frac{1}{3}$ of a mile, and is marked at its outer extremity by Sarva skerry, a rock always above water ; at $\frac{3}{4}$ of a cable from the skerry is a smaller rock, which is also always above water ; and between these rocks and the south-west rocks of Fish holm is a channel, less than $\frac{1}{2}$ a cable in breadth, with 5 fathoms in it, but the rapidity of the tides through it, renders it in general unsafe for the passage of a vessel. The narrow channel between Linga and Firths Ness has $2\frac{1}{2}$ to 3 fathoms in it, and is generally used by the native boats passing between the various harbours on the south-west side of Yell sound, but through it also the tide runs with considerable rapidity.

Weather Holm is a little less than $\frac{1}{2}$ a mile S. by W. $\frac{3}{4}$ W. from Linga, and is a small islet about 2 cables over ; clear on all sides and steep-to.

SAMPHRA, one of the largest islets in Yell sound, lies nearly equi-distant from the shores of Yell and Mainland, and is the divisional mark between the north and south channels ; it is $\frac{3}{4}$ of a mile to the northward of Fish holm, and $\frac{3}{4}$ of a mile to the westward of Rumble rocks. Its greatest length, in a northerly and southerly direction, is nearly a mile, and its breadth $\frac{1}{2}$ a mile, and it may be approached upon all sides to within a cable. The southernmost and safest channel through Yell sound is entered between Samphra and Fish holm.

BIGGA, an islet lying in the same direction, and nearly of the same size and form as Samphra, from which it is distant a mile, also lies midway between Yell and Mainland ; the channels on either side being deep and clear ; that between Bigga and Yell is $\frac{2}{3}$ of a mile wide ; the other is $\frac{1}{2}$ a mile in width.

Sliga Skerry is $\frac{1}{2}$ of a mile from the north-west point of Bigga, and $\frac{3}{4}$ of a mile to the eastward of Mio Ness in Mainland. A small portion of this rock is always 10 or 12 feet above water, from which it dries out at low water for the distance of a cable.

UYNARIE, an islet $\frac{1}{2}$ of a mile to the northward of Bigga, and only separated from it by a boat passage among rocks which dry at low water, is narrow, and about $\frac{1}{2}$ a mile in length N. by E. and S. by W., and except upon its south-west side, it may be approached in every direction to a cable. The channel between Uynarie and Ness of Sound, a rounded peninsula projecting from Yell, is quite clear, and $\frac{1}{2}$ a mile wide.

BROTHER ISLAND, at the termination of the narrow portion of Yell sound, is N.W. $\frac{1}{4}$ W. $\frac{1}{2}$ a mile from Uynarie, and N.N.E. $\frac{3}{4}$ E. one mile from Mio Ness; it is rather more than $\frac{1}{2}$ a mile long N.N.W. and S.S.E., and $\frac{1}{4}$ of a mile broad. The Stoura Baa, a rock drying at low water, lies N.N.E. $\frac{1}{2}$ E. $\frac{1}{4}$ of a mile from the northernmost part of the islet, with 5 and 6 fathoms close to it, and a ledge also extends from its south-east point for a cable; with these exceptions, the island may be approached to that distance.

Tinga Skerry, a large rock 20 feet above high water, lies S.W. by W. $\frac{2}{3}$ of a mile from the north part of Brother island, and N. by W. $\frac{1}{4}$ W. 1 mile from Mio Ness. At a cable E.N.E. $\frac{1}{4}$ E. from it is a small rock, also visible at high water, and connected with the larger mass by rocks which dry at low water; they may be neared to $\frac{1}{2}$ a cable.

LITTLE ROOE, an islet so named from its red cliffs, is N.W. by W. $\frac{2}{3}$ mile from Mio Ness, and it partly covers the entrance to Urka voe. It is $\frac{1}{2}$ a mile long N.N.W. and S.S.E., and 2 cables broad; it is clear of danger on all sides at the distance of $1\frac{1}{2}$ cables.

LAMMA, or Lamba island, N. $\frac{3}{4}$ W. $\frac{9}{10}$ mile from Little Rooe, and E. by S. $\frac{1}{2}$ S. $\frac{3}{4}$ of a mile from Ollaberry Ness in Mainland, lies in an E.N.E. and W.S.W. direction, and is of the same general size as Brother island. A rock, uncovered at low water, lies $1\frac{1}{2}$ cables from its eastern point, abreast which, the island should have a berth of $\frac{1}{4}$ of a mile; with this exception, it may be approached to $1\frac{1}{2}$ cables.

FIORD and MIDSOUND, or LINNA BAAS, are separate sunken rocks, with 12 fathoms about them, lying well out in the body of Yell sound; and as the sea breaks heavily upon them in northerly and westerly gales, they are particularly dangerous at such times. The Fiord has only 9 feet upon it, and lies N.E. 1 mile from the north-east point of Lamma, and N. by W. $\frac{3}{4}$ W. $1\frac{1}{2}$ miles from Brother island. Midsound Baas, with 3 feet upon them, are N $\frac{1}{2}$ E. $1\frac{1}{4}$ miles from the north-east point of Brother island, and abreast, and nearly midway between the Fiord and Yell.

LITTLE HOLM is nearly in the middle of Yell sound, about a mile from the sunken dangers just described; it is not more than $\frac{3}{4}$ of a cable in extent, and a small rock, always above water, lies $\frac{3}{4}$ of a cable from its north-east side. The centre of the holm is N. by W. $\frac{1}{4}$ W. 3 miles from the north point of Uynarie, and nearly in the line of Midsound Baas, and N.E. $\frac{3}{4}$ N. $2\frac{1}{2}$ miles from Lamma, and nearly in the line of the Fiord.

STOUR HOLM is N. by E. $\frac{3}{4}$ E. $1\frac{1}{4}$ miles from Little Holm, and, like the latter, lies well over towards the middle of the sound. It is $1\frac{1}{2}$ miles

in length N.E. $\frac{3}{4}$ N. and S.W. $\frac{3}{4}$ S., and being clear of outlying rocks, may be approached on every side to within a cable.

The north entrance of Yell sound is 4 miles from Stour holm, and in this space there is no obstruction to the navigation.

The sides of the sound are, with a few exceptions, bold-to. The whole of Yell shore may be closed to within $1\frac{1}{2}$ cables from Copista Brough to the western coast; and in this district there are only two outlying islets, Sandwich holm, nearly abreast Stour holm, with a small rock always above water lying $\frac{1}{2}$ of a cable from its north point, and a ledge extending from its south end for the same distance,—and Swine holm, $1\frac{1}{2}$ miles farther to the northward. As these islets are but a short distance from Yell, and lie out of the main navigation, they need no further notice. The south-west or Mainland shore is also nearly free of outlying rocks; the exceptions being the skerries of Skea, lying nearly $\frac{1}{2}$ a mile from the shore, abreast of Little holm, and the skerries of Rooe, abreast Stour holm. By daylight, both these clusters are visible at a considerable distance, and they may be approached to within 2 cables. In working, vessels should keep without the indentations in the shore on either side.

DIRECTIONS.—In navigating Yell sound, it is necessary to remember that the rate of the tide stream in the south, or narrow portion of the sound, is exceedingly rapid (6 and 7 knots, according to reliable authority), and a commanding breeze therefore is requisite to insure a safe passage through it.

As the Rumble rocks and Yell Baa materially obstruct the north channel, the channel between Samphra and Mainland is always to be preferred.

The first danger to be avoided in entering the sound is Cloa rock, already mentioned; the



breakers in open weather disclose its position; but at other times, the Horse of Burra voe, open or to the eastward of Muckle skerry N.N.E. $\frac{1}{2}$ N., will

Horse of Burra voe, open to the eastward of Muckle skerry, N.N.E. $\frac{1}{2}$ N.

lead to the eastward of it; Copista Brough, open of the north point of Urphacy W.N.W., leads to the northward; and the Brough, shut in by Urphacy N.W. by W. $\frac{1}{2}$ W., clears it, passing to the southward; while the Horse of Burra voe, on with Stanyard rock N.E. by N., will lead to the westward.

CAUTION.—Care must be observed not to mistake for the Horse of Burra voe a point of similar character $\frac{1}{2}$ a mile to the northward of it.

Copista Brough in one with the north part of Urphacy leads to the southward of Burga skerry.

To pass between Rumble rocks and Yell Baa, keep the north point of Bigga on with Copista Brough N.W. by N.; this mark also clears on the outside, the rocky $2\frac{1}{2}$ fathoms patch to the westward of Urphacy. Enfield, a white house standing above the north point of Firths voe in Mainland, kept well open of the south point of Samphra W. $\frac{1}{2}$ N., leads to the southward of the Rumble rocks; and the south point of Bigga, shut in upon the north point of Samphra, will lead to the westward of them.

The north-east point of Lamma, on with or open to the westward of Tinga skerry N.W. by N., clears the foul ground from Sliga skerry.

Stoura Baa, the rock lying out from the north point of Brother island, is cleared passing to the eastward by keeping the east side of Samphra touching the west side of Uynarie S. $\frac{3}{4}$ E.

The north-east points of Uynarie and Brother island, kept in one S.E. $\frac{3}{4}$ E. leads between Lamma and the Fiord.

The east side of Bigga, touching the west side of Uynarie South, leads to the eastward of Midsound Baas; and Green holm, near Fethaland point, kept to the westward of Stour holm N. by E., will lead to the westward of them.

The foregoing comprise all the clearing marks to be used for avoiding the dangers in Yell sound; for after the Fiord and Midsound Baas have been passed, the remainder of the strait has a breadth of 3 miles, with only two obstructions, Little and Stour holms; and the difficulties of navigating are also materially lessened, from the rate of the tide streams not being half that to which they attain in the southern part of the sound.

TIDES.—Between Urphacy and Burra Ness, the flood set during the first three hours is to the eastward, but for the remaining three hours and the whole of the ebb, the set is to the westward. The southern limit of this eddy tide is half-way across the sound, with Ronas hill on with the south part of Urphacy.

HAMNA VOE,* the first voe which occurs to the southward on entering Yell sound, is 2 miles to the westward of Lunna Ness, and immediately to the eastward of Setter Ness. The security of this small harbour is much increased by a natural breakwater which projects directly out from its eastern side, leaving an entrance only $\frac{1}{2}$ a cable wide, with a depth of 3 fathoms, which increases quickly within to 5 and 10 fathoms; but owing to the difficulty of exit with foul winds, the voe is only frequented by the native fishing vessels. In approaching this voe, it is necessary to be careful of the Stoura Baas opposite Ultrabister house, and in entering, to

* Hamna is a name generally applied in Shetland to those voes which have a basin-like form, with a narrow entrance.

keep rather over towards the western side. When within, anchorage may be taken up in any convenient depth, the available space being about $\frac{1}{4}$ of a mile square.

WEST VOE of LUNNA, at the western end of the peninsula of Lunna, and $1\frac{1}{2}$ miles from Hamna voe, indents the shore in a south-easterly direction, leaving a narrow isthmus, only 230 yards broad, between its head and the western side of the entrance of Vidlön voe. At its outer entrance abreast Cul Ness, the southern point, the voe is $\frac{1}{2}$ a mile wide, with a depth of 18 fathoms, which decreases towards the shore to 10 fathoms; but about midway up the voe, between Pond holm and a long low projecting point abreast, the channel is reduced to a cable in breadth, and the depth to 5 fathoms; a short distance farther in is a bar, with 13 feet at low water; beyond which, the voe again expands, and has an average depth of 4 and $4\frac{1}{2}$ fathoms, and here is the anchorage.

In entering, it is necessary to avoid a small rock which is uncovered at low water, and lies $\frac{1}{2}$ a cable to the northward of Pond holm; there is also another rock always above water at the end of the spit from the north-east shore, abreast which, is the narrowest part of the channel.

The voe is available for vessels drawing 13 feet water, and it is much frequented by small sloops and fishing vessels.

SWINING VOE is immediately to the westward of the west voe of Lunna, Cul Ness being a point common to both; its entry is $\frac{1}{2}$ a mile wide, from whence the voe gradually diminishes in breadth, and extends in a S.S.W. direction for $1\frac{1}{2}$ miles, when it ends. The head of the voe dries for $\frac{1}{4}$ of a mile at low water, and then shelves off shoal for $\frac{1}{2}$ a mile farther, so that depth available for anchorage is confined to the first mile within the entrance.

A depth of 8 fathoms will be found within 60 yards of the western shore of the voe, but the opposite side is neither so direct nor so bold, and should be given a berth of a cable. In entering, proceed in mid-channel for $\frac{3}{4}$ of a mile, until abreast a small skerry, which is connected with the south-east shore at low water; and here, having Setter Ness shut in by Cul Ness, and the skerry bearing S.E. by E. $\frac{1}{4}$ E., anchor in 10 fathoms. Two cables within this position, the depth suddenly decreases from 10 to 4 fathoms.

COLIFRITH VOE has its entrance between Colifrith Ness and Fora Ness, and is about $\frac{3}{4}$ of a mile to the south-west of Weather holm, one of the islets already described. The voe runs in $1\frac{1}{2}$ miles in a W. by S. direction, has a nearly uniform breadth of 2 cables, and is steep-to on either shore; but as the depths in it are great, even towards the head, and it is exposed to gales from the eastward, it is only frequented by boats.

DEALS VOE is separated by a rectangular strip of high land $\frac{3}{4}$ of a mile in breadth from Colifrith voe, and like the latter, has its channel of approach between Colifrith Ness and Fora Ness, but its immediate entrance, facing southwards, is between Deals Ness and the west shore of Fora Ness, a passage 2 cables wide, and steep-to on both sides. Within the entrance, Deals voe runs in the same general direction as Colifrith voe for $2\frac{1}{2}$ miles, with a breadth gradually decreasing from $\frac{1}{2}$ a mile. The common anchorage is about half-way up, in 11 fathoms water, just below a small point projecting from the north shore, where the greatest contraction of the voe begins.

Special directions for navigating Deals voe are unnecessary, as there are no outlying dangers, and the shores throughout are steep-to, and may be approached within $\frac{1}{2}$ a cable. The depth diminishes with regularity from 17 fathoms at the entrance, and the holding ground throughout is excellent; it need be so, for with westerly winds the gusts descend with great violence from the high land enclosing the voe on either hand. In moderate weather, the same feature renders the voe subject to calms and baffling winds, and makes entry difficult.

FIRTHS VOE, the entrance to which, $\frac{1}{4}$ a mile wide, is between the northern point of Firths Ness and Enfield point, and nearly opposite the northern part of Linga, is frequented by the country sloops as a good stopping-place for a tide in the summer months. The voe is of a triangular form, and about a mile deep in a west direction; the depths diminish from 14 fathoms at the entry gradually towards the head, and for half the distance the shores on either side may be approached to $\frac{1}{2}$ a cable; afterwards the sides are shallower, and the head of the voe dries at low water for $1\frac{1}{2}$ cables.

Moss Bank.—On the shore of the sound, $\frac{1}{2}$ a mile to the northward of Enfield, is Moss bank, the post-office of the district, and the seat of the ferry across Yell sound.

TOFTS VOE has its south point 2 cables to the northward of Moss bank, and its form is that of an irregular triangle. One mile wide at its entrance, it extends inwards $\frac{3}{4}$ of a mile in a westerly direction, and its sides, which are free from danger, may be approached to a cable, and its head to within $\frac{1}{4}$ of a mile. The usual anchorage is in 10 fathoms, soft clay, with the north point of Bigga on with the northern point of the entrance.

This voe is one of the most convenient anchorages in Yell sound; it is of easy access, the ground is excellent for holding, and although it has a north-easterly and easterly exposure, yet the rapid stream passing the entrance, has the effect of reducing the sea and maintaining smooth water in the voe.

From Tofts voe to Mio Ness, the shore may be neared in working to $1\frac{1}{2}$ cables.

URKA VOE, between the peninsula of Urka and the western shore of Mio Ness, is nearly 2 miles long in a south-westerly direction, but nearly $\frac{1}{2}$ a mile of its head is dry at low water; it also, like the voes just described, is of a triangular form, and its entrance, a mile wide, is partially protected by Little Roe and Tinga skerry. This voe is free from obstructions; the bottom shelves regularly in every direction, and anchorage may be taken in any convenient depth, but it is prudent not to go into less than 7 fathoms, as the breadth above that is very contracted.

The voe is not much frequented, on account of the close proximity of the superior anchorage of Tofts.

SULEM VOE.—Colbrack Ness, the western point of Urka voe, is the eastern boundary of the entrance to Sulem voe, a noble sheet of water 7 miles deep, and one of the longest voes in Shetland. The head of the voe is only separated from the western shore of Mainland by a narrow isthmus, $\frac{1}{2}$ a cable broad, across which boats are frequently dragged to avoid the round of North Mavine, the name borne by the northern portion of Mainland, thus nearly disconnected.

Sulem voe is of a winding form, but its general direction is about south-west; its average breadth is about a mile, and the depths in it vary from 28 to 10 fathoms. It is nearly free from obstructions at a fair berth from the shore on either side, the exceptions being Nug holm, with a stony extension from it, 2 miles within the entrance, and $\frac{1}{2}$ a mile from Foula Ness, and the long shelving point, Agrista Ness, about a mile from the head of the voe.

Upon entering the voe, proceed in mid-channel for nearly 2 miles, and on nearing Nug holm, bring the north-east point of the peninsula of Glus on with the south-west part of the peninsula of Urka N. by E. $\frac{3}{4}$ E., the mark to lead clear of the east side of the bank from Nug holm, which is steep-to. Small vessels may, if necessary, pass between the holm and Foula Ness in 16 feet at low water.

GARTH VOE, the usual anchorage, on account of the moderate depths in it, and its convenient position, is on the south-east side of Sulem voe, and abreast Nug holm. The marks for the anchorage are Garth Ness (the western point of Garth voe), on with the south extremity of Foula Ness W.N.W. $\frac{1}{4}$ N., and Garth house E. $\frac{3}{4}$ N. in 7 fathoms, muddy bottom; but vessels may anchor farther in if necessary, as the depths decrease gradually towards the shore.

For several miles above Garth voe, no directions are necessary, as the shores on either side are clear, and may be approached closely, but between Agrista Ness and Voxter Ness, the channel, being considerably contracted by the tongue stretching from the former point, is termed the Narrows, and it is necessary to keep well over towards Voxter Ness. Above this the voe expands, and anchorage may be taken up at the head in 19 fathoms mud, about 2 cables from the shore, with a prominent storehouse, which stands on the beach below Brae house, bearing S.E. $\frac{3}{4}$ S.

GLUS VOE, immediately on the west side of the entrance to Sulem voe, stretches in between the peninsula of Glus and the shore of North Mavine for $1\frac{1}{2}$ miles with an irregular breadth; half way up it is little more than a cable across, while at its head the width is $\frac{1}{2}$ a mile. The sides are clear, and the general anchorage is a cable from the head of the voe, in $5\frac{1}{2}$ fathoms, mud, with Ollaberry Ness touching the west side of the peninsula of Glus. This voe is but little frequented, as it cannot be entered or quitted except with a fair wind.

Vessels may anchor in off-shore winds in Ollaberry bay, upon the south side of Ollaberry Ness; the best berth is in 8 or 9 fathoms, with Ollaberry house bearing N. $\frac{1}{2}$ W., and Colbrack Ness open of the north-east extremity of Glus peninsula.

QUYFIRTH VOE is opposite Lamma, and nearly $\frac{3}{4}$ of a mile from Ollaberry Ness; it is $\frac{1}{2}$ a mile broad at the entrance, and nearly a mile deep N.W. by W. to the beach at its head; its shores are clear, and the outer half of the voe has a convenient depth, but it is little used by the native vessels, as it is inferior to the neighbouring voes.

COLIFIRTH VOE is separated from Quayfirth voe by a narrow tongue of high land named Quayfirth Ness; it is a mile deep, and $\frac{1}{2}$ a mile wide; the south shore is plain, but upon the north side, are two small bays; at the head of the innermost bay is a deep ravine, with a burn running down it that is crossed by a small bridge: in this bay is the usual anchorage, and a berth may be taken up in 7 or 8 fathoms, clay, at $1\frac{1}{2}$ cables from either shore, with Colifirth Ness, shut in by Lockend point at the eastern side of the bay.

NORTH BOOL, the last of the voes upon the west side of Yell sound, is directly abreast Stour holm, and may be recognised from a distance by some prominent houses skirting its shore. This inlet is of a circular form, but the entrance into it is contracted, and is rendered difficult by a patch of rocks, which dry at low water, lying nearly in the middle of the entry; on either side of it there is a depth of 14 feet, increasing within to 3 and $3\frac{1}{2}$ fathoms over a bottom of sand.

As already described, two large rocks always above water, named the skerries of Rooe, lie to the northward of this harbour. In entering with the outermost of the skerries of Skea on with Calsta Ness S. by W., and then with the skerries of Rooe in one E. by N. $\frac{3}{4}$ N., a large white house will be observed close to the shore on the north-west side of the voe; steer for it, keeping within $\frac{1}{2}$ a cable of the eastern point of the entrance, and continuing on this course until the outermost of the skerries of Rooe is shut in; this is the mark for clearing the rocky patch in the entrance, having passed which, a berth may be taken up about the middle of the voe; small vessels may go farther in.

Only two more voes require notice, and they are both in Yell at the south entrance of the sound.

HAMNA VOE is entered between Urphacy island and Burga skerry, which are about a mile apart, and the voe running in from thence in a N.N.W. direction is $1\frac{1}{2}$ miles long, and on the average $\frac{1}{2}$ a mile wide, but it is much contracted midway by a low peninsula connected with the eastern shore. This voe is exposed to gales from S.S.E. to S.E., but the holding ground is good, and the sides being free from obstructions, may be neared to $\frac{1}{2}$ a cable.

The dangers are all visible with the exception of Burga skerry, which is covered at half tide; having passed to the southward of this (by using the mark already given on page 33), keep within $\frac{1}{2}$ a mile of Urphacy island and the west shore until the voe opens, and then proceed in. The usual anchorage is in 7 fathoms before arriving at the low peninsula mentioned above, or farther up, with three small houses on the western shore bearing S.W., about 2 cables distant. In this position there is a depth of $4\frac{1}{2}$ fathoms and comparatively good shelter.

BURRA VOE is immediately to the north-east of Burga skerry and Green holm, and at the south-east extremity of Yell island; the voe runs in E.N.E. for $\frac{1}{2}$ a mile, and is narrow and of difficult passage. Within, there is a depth of 3 and $3\frac{1}{2}$ fathoms, but as a bar with 9 feet upon it stretches across the entrance, the voe is only available to vessels of that draft, and the services of a pilot are indispensable.

Being obliged to enter Burra voe from stress of weather, or other cause, close Green holm on a N.W. by W. bearing, and having arrived about a cable from it, steer north-easterly for the entrance till the voe opens. In entering, keep rather towards the south shore, and having passed the easternmost white house on the north shore, anchor in the middle of the voe in $3\frac{1}{2}$ fathoms.

Having thus described Yell sound, the description of the eastern coast of Shetland will now be resumed.

MUCKLE and LITTLE SKERRIES (or as they are sometimes called the skerries of Niveback), rocks always above water, lie close off Burra voe, and together form the northern boundary of the south entrance into Yell sound. The Muckle or largest skerry is about a cable over, and $\frac{1}{2}$ a cable in breadth; the little skerry is $1\frac{1}{2}$ cables W. by N. $\frac{1}{4}$ N. from the Muckle skerry. The Muckle skerry is bold-to, with the exception of its north-west side, from which a small rock, dry at low water, lies out at the distance of a cable, and another small rock, $\frac{1}{2}$ a cable farther to the north-east. The little skerry is foul to the north-east.

No vessel should attempt to pass between these rocks, but a channel $1\frac{1}{2}$ cables wide with 9 fathoms in it, separates them from the rocks of Burra Ness.

The Stanyard rock is a high isolated mass upon the shore, $\frac{3}{4}$ of a mile to the northward of the skerries, and abreast the head of Burra voe. Three-quarters of a mile farther is the Horse of Burra voe, a high and conspicuous conical mass, connected by a neck of lower ground to the point off which it is situated. Both the Stanyard rock and Horse of Burra voe are very prominent objects from the sea, and have already been used as clearing marks for Cloa rock (page 28).

The south-east coast of Yell from Burra Ness to Reafirth voe (omitting the indentations), is free from danger at the distance of 2 cables, so that a vessel passing at a berth of $\frac{1}{4}$ or $\frac{1}{2}$ a mile, according to circumstances, will be in safety. Six miles from Burra Ness are the islands of Fetlar and Hascosea, forming between themselves and Yell, Colgrave and Hascosea sounds.

FETLAR, the fourth of the Shetland islands in respect to size, is of irregular outline, being deeply indented by several large bays; it lies in a general south-east and north-west direction, and is 5 miles in length and about $2\frac{1}{2}$ miles in breadth. The island is elevated to north-east, attaining in the Vord hill a height of 521 feet, and the East Neap, a cliff fronting it to the north-east, is one of the most imposing objects in the Shetlands. The surface of the island is in an advanced state of cultivation, and Burgh hall, near its north-west extremity, is the residence of the proprietor, and the most prominent of the few houses which stand on the island.

As the coast of Fetlar is nearly free of danger, no particular directions for it are necessary, but several of its bays are often used as anchorages in off-shore winds.

Tresta Bay, the largest of these, is upon the south side of the island between Mouwick head and Snap point, nearly 2 miles deep in a N.N.W. direction, and a mile wide. Its shores are bold and have no outlying

rocks, but it is exposed to south-easterly gales of wind, and even westerly gales drive a considerable swell round Mouwick head into the bay.

In approaching Tresta bay from the westward, some rocks off Rams Ness are to be avoided; there are three of them; they dry at low-water springs, and the outermost is fully 2 cables from the shore; the high red cliff, the West Neap of Fetlar, kept in sight, clears these rocks on their west side, and a berth of $\frac{1}{2}$ a mile leads to the southward. Mouwick head may be rounded closely, and the western shore of the bay kept aboard, as they are steep-to. Steer towards the beach at the head of the bay, and when Mouwick head is shut in by the lowest projecting point to the northward of it, bearing S. by E. $\frac{1}{2}$ E., and the manse bears N. $\frac{3}{4}$ E., anchor in 10 fathoms water, the nearer to the western shore the better, to avoid the swell. In working into the bay, give the points a berth of a cable.

Grating Bay is on the north-east side of Fetlar, between Strandburgh Ness and the East Neap; at the foot of which is a high, inaccessible, and conspicuous rock, named the Clett. This bay has a general south-westerly direction, and is $\frac{3}{4}$ of a mile deep and wide; the north-west side may be neared to a cable, and the south-eastern to half that distance; the depths gradually decrease towards the shore. A low promontory, giving the bay a double head, has a reef extending from it for the distance of $\frac{1}{2}$ a cable. The usual anchorage is in the south-eastern corner of the bay. In approaching it, keep along the eastern shore, and when the north-west side of the Clett is apparently touching the point of Fetlar next south of it N. by W., and Hesta Ness is E.N.E. $\frac{3}{4}$ N., bring up in 6 or 7 fathoms, sandy bottom. Small vessels may continue on for $\frac{1}{2}$ of a mile into a depth of 4 or 5 fathoms.

From Heilinabretta, the north-east extremity of Fetlar, the course to the south entry into Balta sound is N. by E. $\frac{1}{2}$ E., 8 miles, and to Lamba Ness N.N.E. $12\frac{1}{2}$ miles.

HASCOSEA ISLAND lies between the north-west side of Fetlar and the eastern coast of Yell; the passages to the eastward and westward of it being named respectively, Colgrave and Hascosea sounds. Like Fetlar, it is of irregular form, and is about $1\frac{1}{2}$ miles long and a mile broad. The island is steep-to nearly throughout, but off its south-west end, at a distance of 3 cables from the shore, is a patch of rocks named Hascosea Baa; the rocky ledge connecting it with the island having a depth of 1 to 3 fathoms upon it. A house (the only one) stands near the south-west end of the island.

COLGRAVE and HASCOSEA SOUNDS are equally available to vessels bound to the north-east within Fetlar. Colgrave sound is rather more than $\frac{1}{2}$ a mile wide, and both sides are clear at the distance of a cable.

The general course through is N.E. by N. The Horse of Burra voe kept well open, or the islet Sound Gruna seen to the eastward of Hascosea, leads to the eastward of Hascosea Baa. Having cleared the sound, Basta voe is open to the north-west; and Blue Mull sound and the channels between the islands north of Fetlar, will also be open to the northward and north-eastward.

Hascosea sound is not so direct as that of Colgrave, but with the exception of Hascosea Baa, it is equally clear of outlying danger. Hevdegarth head on the north side of the entrance of Reafirth voe, shut in by Lusetter head, leads to the south-west of Hascosea Baa. A flat extends for some distance to the north-west, from Yell shore opposite Hascosea, but this is avoided by keeping well out towards the middle of the sound; and having cleared the latter, Basta voe and the neighbouring channels will be open.

REAFIRTH VOE, or, as it is perhaps more commonly termed, Mid-Yell voe, is a deep winding indent in Yell, opposite the south-west end of Hascosea; the entrance is bold but narrow, and there is space within for the secure berthage of a considerable number of vessels. The voe winds to the north-west for $1\frac{1}{2}$ miles: the narrowest part of the entry between Hevdegarth head and the southern shore is only $\frac{1}{6}$ of a mile wide. The land on either side is very high, the voe is consequently subject to eddy winds, particularly when it is blowing strong from the northward.

DIRECTIONS.—In approaching Reafirth voe through the south part of Hascosea sound, and having cleared Hascosea Baa as previously directed, it is necessary to give Vatsetter and Lusetter heads a berth of a cable, and having passed the latter head, the voe opens. Kay holm and Hevdegarth head, both upon the north side of the entrance, may be neared to $\frac{1}{2}$ a cable, at which distance there is a depth of 5 fathoms. When the vessel is so far through the entrance as to have the manse on the high ground upon the port beam, a course must be shaped more northerly, and when Lusetter head is shut in by Hevdegarth head, and the kirk, which stands low on the margin of a bay in the southern shore, bears S.W. $\frac{1}{4}$ S., anchor in 6 fathoms, over a bottom of mixed mud and sand—this position is landlocked. Small vessels may take a berth farther up the voe, or towards either shore, at discretion.

CAUTION.—In working, care must be taken to avoid a flat which occupies the bay in front of the kirk; it may be neared by the lead to the depth of 4 fathoms; the points also should have a fair berth given them.

BASTA VOE is 2 miles from Mid-Yell voe, and opposite the north part of Hascosea island. This harbour is free from outlying danger, and runs

inwards in a N.N.W. direction for 3 miles, the breadth gradually decreasing from $\frac{1}{2}$ a mile at the entrance.

If approaching the voe from the north-eastward, it is necessary to give the eastern head of Burra Ness a berth of $\frac{1}{2}$ a mile, to avoid a rocky ledge which projects 2 cables from it. Proceed up the voe in mid-channel; or if working, close either side by the lead into a depth of 6 fathoms. Nearly 2 miles up the voe, is the second of two low points projecting from the northern shore, fronted at low water by a beach of shingle 140 yards broad, under the protection of which, is the usual anchorage. Having passed the point, bring Basta Ness on with it, and anchor in a depth of 6 or 7 fathoms, clay.

Supplies.—Quantities of native oysters may be procured in this voe with little trouble; fish of various kinds are also plentiful, and a fair quantity of ordinary supplies may at times be procured at reasonable charges.

The following is a brief description of several small islands lying to the north of Fetlar, and in the mouth of Blue Mull sound:—

Sound Gruna is N.E. $\frac{1}{4}$ N. $1\frac{1}{2}$ miles from the north entry of Colgrave sound, and N. $\frac{3}{4}$ E. $\frac{3}{4}$ of a mile from Hammer Ness, the north-west extremity of Fetlar. In a small valley in the centre of the islet are the ruins of a house, useful as a distinguishing mark. It may be approached on all sides to a depth of 7 fathoms, or within the distance of a cable.

Urie Linga, $\frac{3}{4}$ of a mile E. by N. $\frac{1}{4}$ N. from Hammer Ness, and S.E. $\frac{1}{4}$ E. $\frac{3}{4}$ of a mile from Sound Gruna, is about $\frac{3}{4}$ of a mile in length N. by E. and S. by W. Off its north point is a large rock, which is connected with the islet at low water. Urie Linga may be closed to the distance of a cable on its north, east, and west sides, but to the south and south-west it is foul.

Dai Island is a short distance to the south-east of Urie Linga, and East $\frac{1}{2}$ mile from Urie Ness; it is about 3 cables in length N.E. by E. and S.W. by W. Three detached reefs occupy the space between Dai and Urie Linga, and no vessel should attempt to pass between them.

In the vicinity of Urie Linga and Dai, vessels may stop a tide and be sheltered from winds from East, round southerly to S.W., by bringing the dismantled mansion of Urie, near Urie Ness, to bear S. $\frac{3}{4}$ W., Hammer Ness W. $\frac{1}{4}$ S. about $\frac{1}{4}$ of a mile, and the north point of Urie Linga N.E. $\frac{1}{4}$ E. $\frac{1}{2}$ a mile; in this position there are 6 fathoms water and fair shelter.

CAUTION is necessary in taking up this anchorage, not to go too far to the eastward, for the space between Urie Linga, Dai, and Urie Ness is foul, some of the rocks drying at low water.

Wedder Holm is E. by N. $\frac{1}{4}$ N. $1\frac{1}{2}$ miles from the north point of Urie Linga, and close to the south-east part of Uya island; the islet is small, and has several detached rocks upon its north-west and south-east sides, but its east and west sides are clear. A rocky ledge, with 3 to 5 fathoms upon it, extends from its south end for $\frac{1}{3}$ of a mile, with 14 fathoms close to it to the southward; this ledge is cleared on its west side when Hark Ness in Uya is open to the westward of Wedder holm, and its east side is cleared when the same point is to the eastward of the holm. In passing to the southward of it give the islet a berth of $\frac{1}{2}$ a mile. The narrow passage between Wedder holm and Uya is sometimes frequented in northerly winds, as all the dangers upon the north side of it are visible; it is not more than a cable wide, with a depth of 5 and 6 fathoms, and in using it, it is necessary to keep nearer to Uya than to Wedder holm.

Haaf Gruna is the easternmost of the islets in the sound between Fetlar and Unst, and is E. $\frac{1}{4}$ S. rather more than a mile from Wedder holm. It is clear at the distance of a cable on all sides. Half a mile to the north-west of Haaf Gruna is a rocky patch with 6 fathoms over it, on which the sea in gales breaks heavily.

Linga (commonly called Yell Linga, to distinguish it from Urie Linga), lying on the west side of the south entrance into Blue Mull sound, is the last of the islands to be noticed here. This island is nearly a mile long in a N. by W. and S. by E. direction, but only a cable broad. It may be closed north, south, and east to $\frac{1}{2}$ a cable, but a rather wider berth should be given its west side. The passage between Linga and Yell is named Linga sound.

BLUE MULL SOUND, a strait 4 miles long and about $\frac{1}{2}$ a mile wide, between Yell and Unst, has received its name from a bold headland on the Unst, or east side of the north entrance, which has generally a distinct bluish tinge when seen from a distance. The shores on either side the sound are considerably indented, though for the most part free from out-lying dangers; but the tide-stream, like that of Yell, sets through at the rate of 6 or 7 miles per hour during springs.

The Holm of Hogoland is at the eastern point of the south entrance of the sound, and it also bounds the west side of the West channel into Uya sound; it is connected at low water with the shore of Unst, and a flat, with only 9 feet upon it, extends $1\frac{1}{2}$ cables from its south-west point. A mile beyond the holm of Hogoland is the small bay of Watswick, contained between Hogoland point and Hogo Ness, and having near its head the mansion of Bellemont; there is 5 or 6 fathoms water in it, but it is only frequented by boats, as the ground is rocky. The remainder of the Unst shore, with the holms of Wick at the entrance of the sound, are clear at the distance of a cable.

The same remarks as to clearing distance apply to the Yell side of the sound, but between Papil Ness and Mygge Ness upon the west side of the north entry, are several rocks lying out some distance from the shore, which it is not safe to approach nearer than $\frac{1}{4}$ of a mile.

CULLA VOE.—On the Yell side, about $1\frac{1}{2}$ miles from the north entry, is the small but secure harbour, Culla voe, in which vessels often anchor in a depth of 4 and 5 fathoms, good holding ground.

DIRECTIONS.—In passing through Blue Mull sound, keep without the indentations upon either side, particularly that of Papil bay in Yell, which is foul, and give each point a berth of a cable.

Hogo Ness open of Hogoland point N. by W. $\frac{1}{4}$ W. clears the foul ground from the holm of Hogoland passing to the westward.

Linga sound, the passage between Yell and Linga, is $\frac{3}{4}$ of a mile wide at the narrowest part, and is generally used in scant westerly winds. In passing through, keep as near mid-channel as practicable, and when abreast the north end of the island, Blue Mull will be observed touching Culla-voe Ness bearing N.N.E. $\frac{3}{4}$ E.; this mark leads clear of all danger up to the latter point.

If intending to anchor in Culla-voe, close Yell under Tonga head, to avoid the strength of the tide, and having passed it, and Hogoland point being shut in by Hogo Ness, steer for Culla-voe Ness, keeping Grimsetter head open of Tonga head S.S.W., and the vessel in a depth of 4 to 5 fathoms. Anchor in 5 fathoms opposite the middle of the voe, with the kirk near its head bearing N. by W. $\frac{3}{4}$ W., and the extremity of Culla-voe Ness E. by S. $\frac{1}{4}$ S. one cable. A short distance within this position the depth diminishes suddenly from $2\frac{1}{2}$ fathoms to 4 feet.

Hogo Ness on with Culla-voe Ness S. by W. $\frac{1}{4}$ W. is the mark for leading through the northern portion of Blue Mull sound, and out to sea clear of all danger; a course may be shaped to the northward or southward when the holms of Burrafiord appear open, and Gloup holm bears W. $\frac{1}{4}$ S.

UYA ISLAND partly occupies an indenture in the sound end of Unst, and affords protection to a small but secure sound, with an entrance at either end of the island. The direction of the island is N. by W. and S. by E.; its length is $1\frac{1}{2}$ miles, and breadth $\frac{1}{2}$ a mile. A well-built farmhouse and buildings stand prominently on the high ground. The bold rocks off Hark Ness (the outermost of which is named Scarf skerry) have already been noticed under the head of Wedder holm; the south-west side of the island is clear and bold close-to; its north end may be neared to within $\frac{3}{4}$ of a cable, or into a depth of 5 fathoms; its eastern side to one cable, and its south end to half that distance. Near the north-east point, at less than $\frac{1}{2}$ a cable off, is a small half-tide rock, named the Voder, and

a bank in connection with it, that has $3\frac{1}{2}$ and 4 fathoms water on it, extends some distance into Skuda sound. The small bays in the margin of Uya are all shallow, and should be avoided in working.

UYA SOUND is opposite the north end of Uya island, the breadth across from the island to the head of the sound being about $\frac{3}{4}$ of a mile. The head of the sound is flat for $\frac{1}{4}$ of a mile, and then suddenly deepens from 1 to 4 fathoms; the sides may be approached by the lead into a depth of 5 fathoms. The sound is exposed to an uneasy swell in south-westerly gales, but affords fair shelter with the wind from other quarters.

DIRECTIONS.—In entering the West channel, the course through which is N.E. $\frac{3}{4}$ E., Bruce hall, a ruined mansion on the south-east point of the sound, shut in upon the north point of Uya island E. by N. $\frac{1}{4}$ N., clears the foul ground from the holm of Hogoland passing to the southward, as well as some shoal ground within it, which, extending from the Unst shore, bounds the West channel for nearly a mile. The channel available for vessels drawing more than 19 feet, is only a cable wide, and it is necessary to keep rather closer to Uya than to Unst. Having passed the island, steer N.E. $\frac{3}{4}$ E. towards the head of the sound, and anchor with Skuda sound shut, and the north extreme of Uya island bearing S.W. $\frac{1}{4}$ W., in 4 to $4\frac{1}{2}$ fathoms, muddy sand. Large vessels should anchor nearer the island, though by doing so, they are more exposed to the swell thrown in through the eastern passage in south-easterly gales.

The eastern channel, or Skuda sound, is at its entrance $\frac{3}{4}$ of a mile wide, and the course through is N.W. $\frac{1}{4}$ N., but the navigable breadth is less than $\frac{1}{4}$ of a mile. A ledge extends $\frac{3}{4}$ of a cable from Littlegarth point, which is cleared by keeping Broomhill house open of the eastern point of Uya sound. This house should never be lost sight of while running or working on the north-east side of the sound. The south end of Haaf Gruna, open of Twin Ness S.E. by S., clears the Voder rock off the north-east point of Uya island, in $3\frac{1}{2}$ fathoms. Give Bruce hall point a berth of a cable, and having passed it, take up the anchorage as before directed.

Uya sound is much frequented as a place of call by the passing trade, and by vessels employed in the deep sea fishing.

TIDES.—It is high water, full and change, in Uya sound at 9h. 45m. In the triangular space between the holm of Hogoland, the West channel, and the south point of Uya island, the tide-stream runs nine hours to the westward, and three to the eastward.

Continuing to the northward, the eastern coast of Unst presents a broken and indented outline, wrecked into every variety of form by the resistless and constant action of the sea; and above it, the bleak yellowish serpentine hills rise with a forbidding and dreary aspect.

SWENEE, a point of Unst to the southward of which lies the inlet Haaf Gruna. Here upon a gentle eminence within the square massive ruin of a tower, the tower presents from every direction seaward.

COLVIDALE BAA, a small bay with $5\frac{1}{2}$ fathoms over it, and 9 to 15 fathoms more about it, is $\frac{1}{2}$ a mile from the south-east extremity of Mu Ness, and with the tacks bearing from it N.W. $\frac{1}{4}$ N. and Haaf Gruna S.W. $\frac{1}{4}$ W. There are also two small passages named Muness Baas, with 4 to 6 fathoms upon them lying 3 cables from the east side of the nees. On all these rocks the sea breaks heavily in stormy weather. Passing within Colvidale Baas in off-shore winds, keep about a couple of cables from the shore; and to clear Colvidale and Muness Baas outside, or passing to the eastward, keep Lamba Ness open of Balta island N.N.E. $\frac{1}{4}$ E.

Lamba Ness is the extreme point to the right in the accompanying view, and Balta island the low double summit in the foreground; the high



Balta island, N. $\frac{1}{4}$ E., 4 miles.

precipitous cliffs between, form the sea face of Nivv hill upon the north side of Haroldswick bay.

Ham Ness, the north extremity of Mu Ness, has a ledge projecting from it in a N.N.E. $\frac{1}{4}$ E. direction for the distance of 3 cables, with 4 to $4\frac{1}{2}$ fathoms on it; the south-east end of Haaf Gruna kept just in sight leads outside it.

VERE REEF lies N.E. by E. $\frac{1}{4}$ E. $\frac{1}{4}$ of a mile from Ham Ness, and the north-east point of it is always several feet above water. The north point of Haaf Gruna on with the south point of Mu Ness, leads across it. From the dry part, the ledge extends S.W. $\frac{1}{4}$ S. for $\frac{1}{4}$ of a mile, with 3 and 4 fathoms water over it. The south-east point of Haaf Gruna just shut in by Mu Ness, leads to the north-west of Vere reef. Swenee Ness seen between Huna and Balta islands N.N.E. $\frac{1}{4}$ E., or Lamba Ness outside Balta island, clears it passing to the south-east.

HUNA ISLAND, the south-western defence of Balta sound, and upon the western side of its south entry, is less than 2 cables distant from the shore of Unst, to which it is nearly connected by several spits which extend from either side; there is accordingly no ship passage within it. The south and east sides of the island are very steep, and its north-east end may be approached to the distance of $\frac{1}{2}$ a cable; a berth of a cable should be given its south-west end.

BALTA ISLAND has a curved form, and runs nearly in a line with the general shore; it is $1\frac{1}{4}$ miles long, but of varying breadth, its sea face having been much broken by the action of the waves; at its narrowest part the width is not more than a cable. The highest cliff is elevated 143 feet, and there is a depth of 20 fathoms at the distance of $\frac{1}{2}$ a cable from the whole of its eastern side. A rock, which dries at low water, lies $\frac{1}{2}$ a cable from the south point, but out of the fairway channel of the south entry into Balta sound; and a ledge extends from the north point nearly two-thirds of the way across the north entry. The west side of the island is low, and may be approached when turning into a depth of 5 fathoms, or to the distance of rather more than a cable.

BALTA SOUND.*—This harbour, the last on the eastern coast of Shetland, is altogether about 2 miles long and $\frac{1}{2}$ a mile wide, and is so completely covered in and defended by the islands of Huna and Balta, that, from some distant points of view, it resembles a lake. The land bordering upon the sound is well cultivated, and sheltered by hills rising gradually from the shore; and the mansion of Buness at the head of the harbour, is noted as the site where the French philosopher Biot, and Captain Kater, in the years 1817–18, carried on their experiments for determining in this high latitude the variation in the length of the vibrations of the seconds' pendulum.

Properly speaking, Balta sound is the space contained between Balta and Huna islands and the shore of Unst; and Balta harbour the western portion of the sound from Swenee Ness to Buness. The width of the south entry into the sound, between Balta and Huna, is $\frac{1}{2}$ of a mile, and that of the north entry about $1\frac{1}{2}$ cables; the extent of the navigable channel is, however, not more than $\frac{1}{2}$ of a cable. Swenee Ness is bold to within the distance of $\frac{1}{4}$ of a cable, but a rock, dry at low-water spring tides, lies a cable from its south-west side; a *red* buoy, in $4\frac{1}{2}$ fathoms, is placed just outside it, with the survey cairn in line with Scarpoe cottages, W. $\frac{3}{4}$ N., and Swenee Ness N.E. $\frac{1}{4}$ E. At the eastern extreme of the south shore of the harbour are four low points; the outer three have rocks extending from them for $\frac{1}{2}$ a cable. Skoetaing, the innermost point, on which a storehouse stands, may be neared into a depth of 4 fathoms, or to the distance of $\frac{3}{4}$ of a cable.

Balta harbour, though $\frac{1}{2}$ a mile wide from shore to shore, has only a clear navigable breadth of 3 cables from a depth of 4 fathoms on either side. About two-thirds of the distance up, the maximum depth is 3 fathoms, decreasing towards the head, where there is a bank of mud and stones.

* See Plan of Balta sound, scale, $m = 2$ inches, in the Admiralty chart of the Shetland Isles, No. 1,118; also Admiralty plan of Balta sound, No. 116; scale, $m = 4$ inches.

DIRECTIONS.—The north entrance is so narrow, that it is never attempted except under the guidance of a pilot. The leading mark through it, Mu Ness on with the east side of Huna S.W. by S., is a distant one, and useless in hazy weather; in such a case, steer direct for Swenee Ness, give it a berth of $\frac{1}{4}$ of a cable, and then continue on to the south-west, passing outside the *red* buoy; or should this be out of place, the south bluff of Nivv hill open of Swenee Ness N.E. $\frac{1}{4}$ N., will lead to the south-eastward of the rock which the buoy is intended to mark. The south entry is free of danger; having passed through it, anchor abreast the middle of Balta island in 6 or $6\frac{1}{2}$ fathoms, sand, with Buness house on with the storehouse at Skoetaing point N.W. $\frac{1}{4}$ W., and the sea face of Nivv hill on with the low north point of Balta island N.E. $\frac{1}{2}$ N.; this is a sheltered position, except between S.S.W. $\frac{1}{4}$ W. and S.W. $\frac{1}{4}$ W.

In proceeding from the sound into the harbour, keep Voesgarth house at the head of the latter, shut in upon Skoetaing point, to avoid the rock off the south-west side of Swenee Ness; having passed which, continue in about mid-channel, and anchor in $5\frac{1}{2}$ fathoms, sand, with Hammer house N.N.E. $\frac{3}{4}$ E., and Buness house N.W. by W. $\frac{1}{4}$ W. Small vessels may anchor farther up in any convenient depth, a cable distant from the north-eastern shore.

TIDES.—It is high water, full and change, at Balta island, at 9h. 45m. Springs rise $6\frac{1}{2}$ feet; neaps $4\frac{1}{2}$ feet. Neaps range $2\frac{3}{4}$ feet.

HAROLDSWICK.—This bay has its entrance, $1\frac{1}{4}$ miles wide, between the north end of Balta island and Nivv hill, from whence it runs in a N.N.W. direction for about $1\frac{3}{4}$ miles, having at its head a small sandy beach, and several houses scattered about the shore. Off the north point of Hagdale, about the middle of the south-west side of the bay, a rock, named the Baa of Hagdale, with 3 fathoms over it, lies out $1\frac{1}{2}$ cables from the shore; the head of the bay is fronted by a shoal flat, $\frac{1}{2}$ a mile broad, but the north-east side of the bay is generally clear. The marks to pass outside Hagdale Baa, are the westernmost house on Balta island open of Swenee Ness S. $\frac{1}{4}$ W., and Greenfield house open of the south-west shore of the bay N. by W. $\frac{1}{2}$ W. This bay is unfrequented except by fishing vessels, owing to its exposed character and the hard nature of the bottom.

NIVV HILL.—The Nivv hill presents to the ocean high inaccessible cliffs running in a N.N.E. $\frac{1}{2}$ E. and S.S.W. $\frac{1}{2}$ W. direction, from the summits of which the hill gradually declines to the north-west, until the foot of it is lost in the low land on the north side of Haroldswick and the west side of Norwick.*

* The Nivv hill is composed of Serpentine rock, and Mr. Thomas observed during his survey of Shetland, that in standing in *closely* towards it, the magnetic needle was attracted $6^{\circ} 30'$ more to the westward than in the offing.

NORWICK, or Northwick bay, is separated from Haroldswick by Nivv hill, and is about a mile wide and deep. The shores are bold to within the distance of $\frac{1}{2}$ a cable, and the depths decrease gradually towards the sandy beach at the head. The ruins of a kirk near the head of Norwick bay, and Nivv hill, are objects by which this part of the coast may be recognised.

LAMBA NESS is a small peninsula forming the north-east point of Norwick, and the south point of Scaw bay; it is clear to within less than a cable, but it should generally have a berth of a mile, so as to avoid in part the cross uneasy sea which usually fronts it. A light upon Lamba Ness would be particularly useful in leading to Balta sound; for flanking the whole eastern shore of Unst; besides enabling vessels to round with more confidence this terminating portion of the Shetland coast.

The SCAW is the north-eastern extremity of Unst and of the Shetland group; the holm directly off it bears N. $\frac{1}{4}$ W. $\frac{3}{4}$ of a mile from Lamba Ness. Scaw bay, between the two, is well known as a fishing station. It is only frequented by fishermen, who have their houses and boats near the sandy shore at its head. Scaw holm is surrounded by rocks above and below water, lying out for a short distance; and 3 cables to the north-eastward of it is a reef, named the Fless of Scaw. From the west part, which is always above water, the reef dips to the north-east for nearly $\frac{1}{4}$ of a mile, and the whole space between it and the holm is foul. In rounding this danger from the southward, keep the east part of Balta island in sight outside Lamba Ness, until the north extremity of Herma Ness is open of the Noup of Burraford, bearing W.N.W.; these marks will clear the reef $\frac{1}{2}$ a mile passing to the eastward and northward. At night vessels rounding the Scaw should avoid seeing the *red* light of Muckle Flugga lighthouse, by keeping the *white* light in sight.

SCAW ROOST, extending out in spring tides from both Scaw and Lamba Ness, though not considered so dangerous as that off Sumburgh head, should nevertheless be carefully avoided, for even in the finest weather a vessel completely loses steerage way in it, and always runs the risk of carrying away her spars or losing her boats.

CHAPTER III.

SHETLAND.—SCAW TO WATTS NESS.

VARIATION IN 1876.

Eaha Ness	-	-	22° 15' W.		Watts Ness	-	-	22° 15' W.
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From Scaw to Herma Ness, the north-west point of Unst, the coast is composed of high inaccessible cliffs, many of them near to the entrance of Burrafiord being of a stupendous character, while above them rises the pyramidal hill Saxavord, consisting of micaceous and talcose slate, to the height of 938 feet above high water; the whole forming a well-marked termination to this extremity of Shetland.

The shore throughout the above extent of coast is bold-to, and may be approached to the distance of a cable.*

BURRAFIORD has its entrance bounded by the Noup of Burrafiord to the eastward, and to the westward by Herma Ness, the distance across being about a mile; the fiord from thence, gradually decreasing in breadth, runs in south-west for $2\frac{1}{2}$ miles, to a fine sandy beach at its head; the sides are high and bold-to within $\frac{1}{2}$ a cable, and the depths decrease regularly from 20 fathoms at the entrance.

As Burrafiord is open to the north-east, it is never used as an anchorage except in extreme cases; when for instance, a vessel caught with the north of Shetland as a lee-shore, and being well found in anchors and cables, has still the chance of being able to ride out the gale in this inlet. Entry is at all times easy; and having arrived so far up as to have in mid-channel a depth of 7 fathoms, a storehouse will be observed at Fuscawick (a small natural harbour upon the west side); anchor with this building bearing W. by S. $\frac{3}{4}$ S., $1\frac{1}{2}$ cables from either shore.



Burrafiord holms. Lighthouse, E. by S. $\frac{3}{4}$ S. 2 miles.

* See Admiralty chart of Shetland islands; No. 1,118, scale, $m = 0.5$ inches. Also, Admiralty general chart of the North sea, from the Channel to the Norway sea, No. 2,339; scale, $d = 3.0$ inches.

BURRAFIORD HOLMS.—A group of holms, stacks, and skerries, called collectively the holms of Burrafiord, extend in an E.N.E. and W.S.W. direction for a mile from a short distance outside the western point of Herma Ness. The northernmost of the group, the Out stack, (the extreme northern point of the British isles,) is a bare pointed rock, bold and clear close-to, and is frequented by myriads of sea-fowl.

The Out stack and Muckle Flugga are to the left, and Herma Ness at the extreme right, in the view; the remainder of the holms, forming nearly one mass with Muckle Flugga, are Little Flugga, Cliff skerry, Tupsta skerry, Vesta skerry, and Ruskick.

Vessels may pass, if necessary, between the Out stack and the holms, or between the holms and Herma Ness, remembering, in the latter case, to give the east and south sides of the holms a berth of a cable, and to keep the Noup of Burrafiord open of Herma Ness, to avoid a reef which projects from the western point of the latter half-way across the channel.

From Herma Ness to Gloup holm, the course and distance are W.S.W. 9 miles; to the outermost of the Ramna stacks W. by S. $\frac{3}{4}$ S. $16\frac{1}{2}$ miles; and to Uya Baas W. by S. $\frac{1}{4}$ S. (southerly) $19\frac{3}{4}$ miles.

The western shores of Unst do not possess a single harbour or even an inlet requiring description here. From Herma Ness to Flubers Gardie, the coast is composed of high bold cliffs, overtopped by the summits of several hills; south of Flubers Gardie to Blue Mull sound the cliffs are lower, but a high background rises immediately from them.

LIGHT.—The North Unst lighthouse is situated on the summit of Muckle Flugga, the outermost of the Burrafiord holms, which is W.N.W. $\frac{1}{4}$ N. and separated by a clear channel 3 cables wide from the Out stack; the building is painted white, and exhibits at an elevation of 230 feet above high water, a *fixed white* light, excepting between N.N.W. $\frac{1}{2}$ W. and N.W. by W. $\frac{1}{4}$ W. towards the Scaw of Unst, in which direction it is *red*. The light should be visible in clear weather from a distance of 21 miles. In rounding Scaw of Unst keep the *white* light always in sight.

REFUGE.—Should a vessel become embayed in a north-westerly or northerly gale between Herma Ness and Gloup holm, the north-west extremity of Yell, she must bear up for Culla voe in Blue Mull sound. The mouth of Blue Mull sound, between the Mull head and the low land of Papil Ness, always shows distinctly; and having entered the sound, Culla-voe Ness will be observed upon the western side $1\frac{1}{2}$ miles distant. Directions for using Culla voe have already been given (page 44), but failing to reach it from the strength of wind or other cause, proceed through the passage to Uya sound, or other of the sheltered anchorages upon the eastern side of the islands.

GLOUP VOE and HOLM.—The north coast of Yell is considerably indented, and Outsta and Gloup Nesses stand boldly forward; though generally clear of outlying dangers, it should have a berth of at least $\frac{1}{2}$ a mile, on account of the strong tide-stream which sweeps past it to and from Blue Mull sound. Gloup voe, $2\frac{1}{2}$ miles from the mouth of the sound, and a mile from the north-west corner of Yell, is a considerable fishing station owing to its favourable situation with respect to the deep sea; but as at low water it dries across about half-way up, and a heavy sea rolls into it in northerly and north-easterly gales, no vessel should enter it. Gloup holm, a high bold rock, and a well-marked object from every side, should have a berth of at least $\frac{1}{2}$ a mile given it. From it the outermost Ramna stack bears W. by S. $\frac{1}{4}$ S. $7\frac{1}{2}$ miles, and Uya Baas W. by S. 11 miles.

The island of Yell is composed of long parallel ridges of gneiss rock of a heavy uniform course from south-west to north-east, and sloping gradually towards the shore. Upon the western coast to the southward of the Gloup, are cliffs of moderate height, backed by rounded hills as far as Whalefirth voe; from whence, to Graveland Noup, a series of high precipitous cliffs, having at their base several remarkable pinnacled stacks, bound one side of the north entry to Yell sound. The whole of the western shore of Yell is bold-to; but, except in off-shore winds, a good berth should be given to it on account of the heavy swell which is generally setting home upon this side of Shetland, and also to have Blue Mull and Yell sounds well under the lee, and available in case of a sudden gale occurring, an event not unfrequent in this variable climate. Just within Graveland Ness, the northern point of the noup, is Whalefirth voe; this inlet, of a narrow serpentine form, is never used by shipping, on account of the difficulty of egress, and the close vicinity of Yell sound with its safe harbours.

FETHALAND, or Feideland point, the north-east extremity of Mainland, and the western boundary of the north entrance into Yell sound, is a peninsula $\frac{2}{3}$ of a mile in length, united to the mainland by a low isthmus $\frac{1}{3}$ of a cable broad, on which stands a small white house and several adjoining huts. In a small bay formed by this peninsula and a point to the southward of it, is an important fishing station, but the inlet only affords protection for boats. The north-west and south-east sides of Fethaland point are foul for the distance of a cable, and N. by W. $\frac{1}{4}$ of a mile from its extremity is a patch of rocks, named the Skate, which dries at low water.

RAMNA STACKS and GREEN HOLM, lying out a mile to the north-eastward of Fethaland point, are evidently the wreckage of one island, for they are all nearly of the same character, and rest upon one rocky base;

indeed, it is probable that, at a remote period, they formed part of the main-



Ramna stacks, S.E. by E. $\frac{1}{2}$ E. 2 miles.

land. Green holm, the south-easternmost of the cluster, differing from the others only in its superior size and the scanty pasture which covers its summit, is about 2 cables in extent in an E.N.E. and W.S.W. direction. Shelving rocks extend from its south-east point for $\frac{1}{2}$ a cable, and several rocks above water upon its west side effectually close the channel between the holm and the stacks. The stacks, consisting of eight distinct rocks, five of which are of considerable size, extend north for nearly $\frac{3}{4}$ of a mile from Green holm, and, excepting to the southward, are bold-to.

The channel between Fethaland point and Green holm, $\frac{1}{2}$ a mile wide, and named Gruna sound, though not commonly used except by native vessels, is available in scant southerly winds to those working into Yell sound from the westward. In passing through, keep within from 2 to 3 cables of Green holm, and when Stour holm is well open to the eastward of Fethaland point, the rocks of the latter will have been cleared, and Yell sound is open.

CAUTION.—As in north-westerly gales there is always a heavy sea in the mouth of Yell sound during the ebb, and particularly in the vicinity of the Ramna stacks, vessels should, if practicable, lie off, and not attempt to enter until the turn of the stream.

SAND VOE, at the head of the bay between Fethaland point and Uya island, is only used by vessels drawing less than 12 feet of water; for though there is good riding in it in off-shore winds, and a depth varying from 4 to 12 fathoms, yet it affords no shelter in north-westerly gales, which blow directly in. Small vessels, however, by anchoring close over upon the western side in 2 or 3 fathoms, opposite the first opening which occurs with a water-mill close to the beach at its head, will be nearly land-locked.

UYA ISLAND and BAAS.—Uya island is W. by S. $\frac{1}{2}$ S $4\frac{1}{4}$ miles from the northernmost Ramna stack; its west and south-west sides are bounded by cliffs with several high rocks fronting them, from whence the surface declines in height to the eastward. At low water, the island is joined by a stony bank to Mainland. Uya Baas are some dangerous sunken reefs, N.E. $\frac{1}{4}$ E., a mile from the west point of Uya island, forming an advanced point beyond the general line of coast. Some of the rocks appear at low water, and a portion of another ledge between the Baas and the island, is always visible.

To clear Uya Baas, north-east side, keep the north-east cliff of Graveland Noup open to the northward of Green holm E.S.E. $\frac{1}{4}$ S.; and to clear



Point of the Burr and Foula open of Ockren Head, S.W. by W.

their north-west side, keep the point of the Burr open of Ockren head S.W. by W. In very clear weather, the high land of Foula will also be seen at the same time, over the point of the Burr. Both these clearing marks are distant, and in hazy weather indistinct; when they are not visible, Uya Baas will be cleared by keeping Green holm to the southward of S.E. by E. $\frac{1}{4}$ E., until the highest part of Uya island is to the eastward of S. $\frac{1}{4}$ E.

RONAS HILL.—South-westward of Uya island, towards Rona voe, the coast continues to present high cliffs of red granite, gradually increasing in height towards the voe, and above them rises the massive barren crest of Ronas hill to 1,476 feet above high water. This, the highest land in Shetland, may in a clear day be seen from nearly every portion of the group.

RONA VOE has its entrance between the north-east fall of Ockren head and the craggy west base of Ronas hill, a passage $\frac{3}{4}$ of a mile wide, and from 18 to 20 fathoms deep; it is also nearly clear of obstructions, only a few detached rocks lying out. From the entrance, the voe runs S.S.W. for a mile; then S.S.E. for $2\frac{1}{2}$ miles, to where it is only 230 yards broad; it then widens, and winds with a more easterly direction for another $1\frac{1}{2}$ miles to the head. The only portions of the voe where there is moderate depth for anchorage are abreast a small rocky point upon the east side where the voe begins to turn; here there are from 7 to 10 fathoms, and a little below the narrows there are also from 10 to 12 fathoms; but with these exceptions, the general depths are from 15 to 17 fathoms to nearly up to the head of the voe.

Generally speaking, Rona voe is not used by shipping, for the contiguous high land renders it extremely subject to violent flaws of wind and calms, thus endangering a vessel's safety either by the loss of spars, or by the swell setting her ashore; but should a vessel from stress of weather be unable to clear the land on either tack, and so obtain shelter in Yell sound or Hillswick, then the only alternative is to bear up for Rona voe. Ronas hill, and the remarkable insulated rock Ossa skerry, a short distance to the westward, are features which sufficiently point out the position of the entrance to the voe. In running in, keep as near mid-channel as practicable, and having arrived so far up as to have obtained

shelter, then anchor as convenient. The whole of the north-east side of the voe is clean, and may be approached to the distance of a cable, but upon the south-west side $\frac{3}{4}$ of a mile below the narrows, is a point from which a flat extends midway across the voe, and it is necessary when abreast it to keep the opposite shore aboard. Smooth water will generally be found at the anchorage just below the narrows, and it is advisable not to go above this position, to avoid increasing the difficulties in quitting the voe.

OSSA SKERRY is W.N.W. $\frac{1}{4}$ N. $1\frac{1}{4}$ miles from the north-west part of



Ossa skerry, S.W. $\frac{1}{4}$ S. 2 miles.

Ockren head. This insulated rock, not unlike the Bass from some points of view, consists of two portions, separated by a deep and narrow chasm, that to the northward being the larger and higher of the two. On the west side of the

smaller mass, at a distance of $\frac{1}{2}$ a cable, is a small rock always showing above water ; with this exception, the skerry is steep-to.

HAMNA VOE is at the head of a small bay 2 miles to the south-west of Ockren head, and immediately upon the north-east side of the point of the Burr. Its entrance, which bears from Ossa skerry S. by W. $2\frac{1}{4}$ miles, lies nearly north and south, and is 70 yards in width ; it opens into a basin (as the name betokens) with a depth of 5 to 7 fathoms, barred by a flat with only 3 fathoms on it.

This voe is used by the native vessels, but it should not be entered by others, except under the charge of an experienced pilot.

From Ockren head to Esha Ness and skerry, the coast is clifty ; the former projection being dark, nearly perpendicular, and with several distinct heads, which open out from various points of view. From the



Esha Ness skerry, S. by W. $\frac{3}{4}$ W. 2 miles.

point of the Burr to the south-west, the coast has been much worn and indented by the sea, while in many instances, deep caves have been formed

in the base of the dark precipitous cliffs. Nearly a mile to the southward of the point of the Burr, a rock, showing only at low water, lies out at the distance of a cable from the shore, and from Esha Ness there are others which dry out for nearly 2 cables ; but Eshaness skerry, which is of the same character as the neighbouring cliffs, is bold-to, and may be approached on its south-west side to half a cable.

ST. MAGNUS BAY has its north-eastern boundary in Eshaness skerry, and its south-western in the Ve skerries and Papa Stour island, and is

altogether about 8 miles wide, and deep. The entire coast of this bay is much broken and varied by rugged points and rocks, bays and voes; and as several of the latter are fortunately available and easily recognised, the danger from being embayed in this deep bight is materially lessened. When the land has once been clearly made out, there is no difficulty in obtaining shelter in one or other of the harbours opening into St. Magnus bay.

TIDES.—Off this portion of the coast it is high water, full and change, at 8h. 30m.; common springs rise 6 feet 7 inches, and neaps range 3 feet 5 inches.

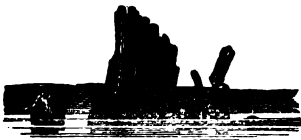
From Eshaness skerry to Hillswick Ness, the largest of the indentations are the bays of Braewick and Sandwick; but they are open and exposed, and are never entered except for some special and temporary purpose. The whole of this section of coast is foul, with outlying rocks for some distance off, and no stranger should attempt to close it. In this same district are the following two remarkable features which serve to distinguish it in hazy weather.

DOOR HOLM, lying S.E. by E $\frac{1}{2}$ E. $\frac{3}{4}$ of a mile from the south point of Eshaness skerry, is the first of these features. This islet, with dark perpendicular sides and a sward-covered summit, has a flying buttress, as it were to the north-west, forming a beautiful arch 70 feet high; besides which, the holm is completely perforated by a cavernous passage, the south-east outlet appearing at a distance like a dark doorway, and hence its name. The holm is foul upon its north side, but in all other directions it may be approached closely.



Door holm, N.N.E. $\frac{3}{4}$ E. 1 mile.

The DRONGS, the other feature of a marked character, is a cluster of tall red granite rocks standing in the sea, like the remains of a gigantic building, a mile N.W. $\frac{3}{4}$ N. from Hillswick Ness. The entire space between Waterhouse holm and the Drongs is foul; and as a reef also extends from the latter to the southward for 2 cables, they should have a berth given them of at least $\frac{1}{2}$ a mile.



The Drongs, North 2 miles.

HILLSWICK*, or **URIE FIRTH**, is a harbour easy of access and with excellent shelter, upon the north-east side of St. Magnus bay. Hillswick

* See Plan of Hillswick, scale, $m = 2$ inches, on Admiralty chart of the Shetland islands, No. 1,118.

Ness upon the west side of the entrance, is S.E. $\frac{1}{2}$ E. 4 miles from Eshaness skerry, from whence, the firth runs in nearly direct for $2\frac{1}{2}$ miles to its head, above which, on the brow of the low hill, is a slated mansion named Urie firth house. At the entrance the breadth is nearly $\frac{3}{4}$ of a mile; near the head the breadth is $\frac{1}{2}$ a mile, from whence a flat extends off for nearly $\frac{1}{2}$ a mile, with 4 fathoms on its outer edge. About half-way along the north-western shore is the small bay of Hillswick, in which is the usual anchorage; at its head is the kirk of St. Magnus, and several superior houses.

Off the south point of Hillswick Ness, at the distance of rather more than a cable, is a small pinnacle rock, which appears only at low spring tides, with 12 fathoms close around it. There is also a sunken patch with 10 fathoms on it, and 16 and 18 fathoms close to it, lying out S.W. by W. nearly a mile from Hillswick Ness, on which the sea breaks in gales.

In entering Hillswick, give Hillswick Ness a berth of $\frac{1}{4}$ of a mile to avoid the rock off it, which is also cleared to the eastward while Urie-firth house is shut in by the land to the southward of it. In running up, both shores are bold and may be closed to the depth of 8 fathoms, or to the distance of $\frac{1}{2}$ a cable. The south-east point of Hillswick bay tails off for some distance and must be avoided; having passed it, anchor near the middle of the bay in 7 or $7\frac{1}{2}$ fathoms, with Hillswick house bearing N.W. $\frac{1}{4}$ N., and the south-east point of the bay in one with the south-east extremity of Hillswick Ness S.W. $\frac{1}{4}$ S. In this position there is excellent shelter in all on-shore gales.

TIDES.—It is high water, full and change, in Hillswick firth at 9h. 45m. Springs rise $6\frac{1}{2}$ feet, neaps 5 feet.

HAMMER VOE, a small inlet, has its mouth a little below Hillswick bay upon the opposite shore, and $\frac{1}{4}$ of a mile within Hammer Ness. At its entrance, the voe is little more than a cable wide, but it quickly increases to double that breadth, with a depth gradually shoaling from 10 to 7 and 6 fathoms, and there are 3 and 2 fathoms nearly up to the head. Both shores are bold close to, and the voe being landlocked, affords shelter from every gale.

Upon the south side of Red head, which is the eastern boundary of the entrance to Hillswick, is Gunvester voe, with Gunvester island covering it in, but as strong winds from the westward cause the sea to break right across the approach, it is unused by vessel or boat. Immediately to the southward of Gunvester island, are Nibon island and Swarta skerry, which, with the coast to the southward of them, are steep-to.

MAGNUSSETTER VOE, the next inlet, is rather more than 2 miles from Gunvester voe; the entrance into it, between Long head and the peninsula

of Islesburgh, is mainly occupied by the islands of Egilsha: passing south of these islands, the entrance becomes visible, but this is still further obstructed by a rock, always above water, leaving between itself and Islesburgh Ness an available channel $1\frac{1}{4}$ cables broad, with not less than 5 fathoms in it. Within the entrance, the voe turns to the eastward and south-east, with sufficient depth and protection, but it is valueless in westerly gales when shelter is required, as a vessel would have to go too close down upon a lee-shore to obtain entry.

At the head of a small voe to the southward of the peninsula of Islesburgh, is the narrow isthmus already alluded to in the description of Sulem voe; this contracted neck, only 100 yards across, is an invaluable boon to the fishermen, who, by dragging their boats over it, effect a saving of 40 miles in distance, and avoid a dangerous passage round North Mavine.

ROOE SOUND, is the narrow channel between the island Muckle Rooe and the shore of Mainland, and though it is not a ship passage, it affords fair shelter under common circumstances, and might be useful in a case of emergency. Its entrance, S. $\frac{3}{4}$ E. $1\frac{1}{4}$ miles from Long head, is partially obstructed by the Lothian rock nearly in mid-channel, with an extension from it to the S.S.E. for the distance of a cable. The position of this danger is always shown by the breakers upon it when the voe is required for shelter, and on either side of it there is a clear channel $1\frac{1}{2}$ cables wide. From the Lothian, the sound runs in S. by E. $\frac{3}{4}$ E. for $1\frac{1}{4}$ miles, and then S.E. $\frac{1}{4}$ S. for $\frac{1}{2}$ a mile to Busta voe; but here the passage is obstructed by a sandy ridge which dries across it at low-water springs.

Roe sound should never be attempted in westerly gales, except from absolute necessity, as for instance, in the case of a vessel becoming embayed between Long head and Muckle Rooe, when entrance into this sound affords the sole means of saving life and property. In closing, steer for the north point of Muckle Rooe, giving it a berth of at least 2 cables to avoid a sunken rock lying off it, and having distinguished the breakers upon the Lothian rock, steer so as to pass midway between them and the shore of Muckle Rooe, and anchor in mid-channel a couple of cables within the Lothian, in 8 fathoms, sand. Vessels drawing less than 14 feet will obtain better shelter by running $\frac{1}{2}$ a mile farther in, until nearly abreast three cottages upon the western side, where, in mid-channel, there is a depth of 4 and $4\frac{1}{2}$ fathoms, sand.

An islet near the inner end of the sound, has some beds of excellent native oysters about it.

MUCKLE ROOE.—This island is easily distinguished in the approach from the land on either side of it by its well marked geological structure. The whole of its sea boundary consists of cliffs of considerable height, and of a red colour, as its name implies; while above them are numerous

barren red hill-tops with scarcely a particle of vegetation upon them. The cultivated part of the island is upon the eastern or opposite side, where also the inhabitants reside. The whole of the sea-face of the island is bold-to, and may be approached closely.

SWARBUCK MIN, a bold, well-marked, and clear passage between the south-west side of Muckle Roe and Swarbruck head, is the common channel of approach to several excellent harbours lying within it. Between Stom or Strom Ness, the south-west point of Muckle Roe, and Swarbruck head, (so named from its being the resort of the swarta, or black-backed gull,) the passage is rather more than $\frac{1}{2}$ a mile in width; it then extends to the south-east for 2 miles, and increases in breadth to a mile, when it is divided by Little Papa island into two channels which lead towards the voes to the northward and southward. This noble entrance has bold shores on each side, and depths of from 30 to 59 fathoms water in it.

Swarbruck Min is S. by E. 9 miles from Esha Ness skerry; S.E. by E. $10\frac{1}{2}$ miles from the north-easternmost of the Ve skerries; and E.S.E. 8 miles from Bordie, the north-west point of Papa Stour island.

No special directions are needed for using Swarbruck Min. A north-west wind blows directly into Magnus bay, and assuming a vessel in a gale from that quarter to be off Esha Ness and requiring shelter, then, the most convenient harbour of refuge for her will be Hillswick; but should she be near the Ve skerries or Papa Stour, then she should bear up for Swarbruck Min, taking a departure from some part of Papa Stour, for though the Min is well marked and the distance to it short, yet misty weather, to which the islands are constantly subject, renders it difficult to distinguish objects until close to them. Having entered the Min, a course may then be shaped to any of the numerous anchorages within.

The various voes and other anchorages within Swarbruck Min, beginning with the northernmost, are as follow. In all of them a vessel is land-locked.

BUSTA VOE is contained between Muckle Roe to the westward, and the shore of Mainland and the island of Linga to the eastward; a narrow isthmus, only 3 cables broad, separates its head from the head of Sulem voe. The general direction of Busta voe is north-east and south-west, $2\frac{1}{2}$ miles long, and about $\frac{1}{2}$ a mile average width; its shores are clear, and may be approached to the distance of a cable; the depths in it vary from 7 to 20 fathoms. On the shore $\frac{1}{2}$ a mile above the inner end of Roe sound is Busta, a substantial mansion surrounded by gardens and moderate-sized trees. It has a small pier and landing-place.

Having passed through Swarbuck Min, a vessel has only to follow the shore of Muckle Roe within a distance of 2 cables, and it will lead her into Busta voe. Anchorage may be taken up in any part of the voe, but the usual berth is in mid-channel within $\frac{1}{2}$ a mile of the head, in 12 or 13 fathoms, with Busta house bearing W. $\frac{1}{4}$ S.

OLNA FIRTH is an inlet within the shore of Mainland, opposite the centre of Muckle Roe, its entrance between Grob Ness and Wethesta Ness, being covered in by the island of Linga. The northern approach, between Linga and Hevden Ness, is intricate, and obstructed by a rock named the Groin Baa, with only 9 feet on it; but the south channel is clear, and the one generally used. The firth is 3 miles in length, running in an E.S.E. direction for $1\frac{1}{2}$ miles, and then S.S.E. to the head; $\frac{3}{4}$ of a mile from which, the shores converge so much as to leave only an available breadth of $\frac{3}{4}$ of a cable. Near the head is Olna firth kirk, several substantial houses, and numerous untenanted and roofless cottages. The road from Lerwick to North Mavine skirts the northern shore. Over the lower portion of the firth is an average depth of 18 fathoms; in the narrows 7 fathoms; the depths then gradually decrease towards the head.

A rock lies out some distance from the south side nearly a mile within Grob Ness; with this exception, the shores of the firth are clear of danger, and may be closed in running or working to a fair berth. This harbour is unfrequented except by native vessels.

CONFIRTE VOE is another inlet of Mainland abreast the south end of Muckle Roe, and is covered in to some extent by the island Linga. The voe is $\frac{3}{4}$ of a mile deep, and $\frac{1}{2}$ of a mile wide, with plain and clean shores, and a depth decreasing from 25 fathoms at the entrance to 5 fathoms, the latter being within a cable of the head.

When this voe is used by vessels, which is seldom the case, they anchor in mid-channel half-way up, in a depth of 9 or 10 fathoms, sand.

LITTLE PAPA SOUND is between the shore of Mainland, and the south-east side of Little Papa, the island which lies across the inner part of Swarbuck Min. The sound is about a mile in extent north-east and south-west. The north-east entry is not more than a cable across, with a depth of $4\frac{1}{2}$ fathoms in it, but the south-west entry, between Selie Ness and the shore of the island, is 3 cables wide, and 8 and 10 fathoms deep.

In proceeding to Little Papa sound, it is necessary to pass round the south end of Little Papa island, which is bold-to, and having passed Selie Ness not nearer than a cable, or with the west extreme of Linga island shut in upon the east point of Little Papa island (on which stands

a house), anchorage may be taken up in the middle of the sound in 9 or 10 fathoms.

In southerly winds, a vessel may quit the sound by the north-east entry; in doing so, she must keep nearer to Mainland than to the low point of the island on which the house stands, for the point is fronted by a spit extending for a cable.

AITH VOE extends 2 miles into Mainland south of Little Papa island, with an average breadth of rather more than $\frac{1}{2}$ a mile. It is the anchorage generally preferred when the wind is to the northward of north-west, as Busta voe is with the wind to the southward of the same quarter. Aith voe has no hidden danger in its approach, or lying out from its sides, and the latter may be closed in working into 7 fathoms, or within the distance of a cable.

Having proceeded through, and $\frac{1}{4}$ of a mile beyond the passage between Little Papa island and Aith Ness, the voe will then be open. About $\frac{3}{4}$ of a mile within the entry and upon the western shore, is the small bay of Braewick, having on its south side the house of Braewick. The usual anchorage is in 14 fathoms, mud, with the house bearing W. $\frac{1}{4}$ S., and the south-west side of Little Papa island, shut in by the south-east part of Aith Ness; but if preferred, a berth may be taken up in mid-channel, within $\frac{1}{4}$ of a mile of the head of the voe, in a depth of 8 fathoms.

VEMENTRY ISLAND, forming the south-west side of Swarbuck Min, is in form an irregular triangle, with shores deeply worn and indented, and its surface is varied by small lakes and hillocks, the highest of which, the Ward of Vementry upon the eastern side of the island, has a cairn on its summit. The island from point to point along its eastern and western shores is bold-to, and its southern side, which is low, and faces Mainland from Braga Ness to Sonso Ness, is separated from it by a narrow channel named Uya sound, about the middle of which, there is only a narrow boat channel with 3 feet in it at low water. It is altogether unfit for the use of a square-rigged vessel.

VEMENTRY SOUND.—Vementry island is the eastern boundary of Vementry sound, a common channel, like that of Swarbuck Min, to several voes lying within it. No vessel requiring refuge should prefer Vementry sound to Swarbuck Min, for it has not so clearly marked an opening as the latter, and its entrance is besides obstructed by several sunken rocks; but in case of a vessel being caught in a sudden on-shore gale in the bight between Swarbuck head and the coast to the westward of it, or having under similar circumstances mistaken Vementry sound for Swarbuck Min, then she has no other resource than to bear up and enter the former.

Vementry sound is $1\frac{1}{2}$ miles from Swarbuck Min, and is the first opening seen to the westward of Swarbuck head. It is bounded to the west-

ward by the Neing of Brindaster ; to the southward by Nounsborough Ness ; to the eastward by Vementry island, and is occupied by several islets and rocks.

STOURA BAA, less than $\frac{1}{2}$ a mile outside the entrance of the sound, with only 13 feet upon it, is N. by E. $\frac{3}{4}$ E. $\frac{1}{2}$ a mile from the high bold cliff the Neing of Brindaster, and N.W. by W. $\frac{1}{4}$ W. $\frac{1}{2}$ a mile from the north-west point of Vementry island. An outer patch, Stoura reef, lies N. by E. 2 cables from Stoura Baa, but it has $6\frac{1}{2}$ fathoms upon it, and is dangerous only in gales. Two cables within Stoura Baa, and nearly in the middle of the entrance to the sound, is the Black rock, which is small, bold-to, and always above water.

Just within the entrance of Vementry sound, but rather over on the Vementry side, is Gruna island, which has been wasted into several portions by the sea ; it is clear on all sides to $\frac{1}{2}$ a cable. The next island is Linga, lying obliquely across the middle of the sound $\frac{1}{4}$ of a mile within Gruna ; several rocks showing above water lie out from its north-east and south-east sides ; the north-west end of the island is bold-to, but with this exception, it should have a berth of $\frac{3}{4}$ of a cable.

VOES IN VEMENTRY SOUND.—Several voes diverge from the head of Vementry sound ; two of these, North and South Clousta voes, run in a south-easterly direction, and have a common entrance between Hale head, the south-west extremity of Vementry island, and the north-east side of Nounsborough Ness. This entrance is obstructed by the Icelanders, a detached reef lying out $\frac{1}{2}$ of a cable from the west side of Hale head, with some of the rocks always above water ; and also by a ledge projecting $1\frac{1}{4}$ cables from the north-east point of Nounsborough Ness, with 3 feet only at its extremity. The navigable channel between is only $\frac{1}{2}$ a cable wide. Onifirth voe runs in S. by W. for 2 miles from the head of Vementry sound ; its entrance, only rather more than $\frac{1}{2}$ a cable wide, being between the north-west point of Nounsborough Ness, and the shore of Brindaster ; the contracted portion is not more than 2 cables long, but a short distance within the narrows and a little above Brindaster house, is a rock always above water. A few detached rocks also lie near the western shore ; the east side is clear, but the voe is altogether too narrow in the upper portion to be used by any but small fore-and-aft vessels.

DIRECTIONS.—Being under the necessity of using Vementry sound, close the entrance with the east part of the Neing of Brindaster bearing S. $\frac{1}{4}$ E., and having arrived within $\frac{1}{2}$ a mile of it, keep in mid-channel between the Black rock and Gruna to the north-east, and the Neing and the rocks lying off it to the south-west ; continue on more south-easterly between Gruna and Linga, and then south-westerly between Linga and Vementry, to the head of the sound.

Proceeding from the head of the sound towards the Clouster voes, keep near to the Icelanders, gradually hauling round them and closing the shore of Hale head to avoid the ledge from Nounsborough Ness; and having advanced so far in as to have Linga island shut in by Hale head, the water will be smooth, and safe anchorage may be taken up in any convenient depth in Uya sound, or in either of the Clouster voes.

To enter Onifirth voe, keep in mid-channel through the narrows, and then haul short round to the eastward, and anchor in 7 fathoms between the north-west point of Nounsborough Ness, and the high-water rock already described.

BURRAFIRTH HOLM, a mile to the westward of the Neing of Brindaster, is surrounded by detached rocks and has a cliffy margin, from which the surface rises towards the centre of the islet. The rocks off the Neing of Brindaster, Burrafirth holm, and the intermediate coast, should have a berth of $\frac{1}{2}$ a mile.

WEST BURRAFIRTH and SNARRA VOES.—Upon the west side of a bay to the westward of Burrafirth holm is the peninsula of Snarra Ness, between the entrances to West Burrafirth and Snarra voes; it is connected with the main by a narrow neck only 40 yards broad, with Snarra house standing at the north end of the isthmus. Snarra Ness is foul upon its north and east sides. Off the northern point is a sunken rock with 13 feet upon it, lying out nearly 2 cables, and off the lowest part of the east side of the ness is another rock, which dries at low-water springs, $\frac{1}{2}$ a cable from the shore.

West Burrafirth voe runs in south-easterly a mile from Snarra Ness, and receives protection from the south-west part of Burrafirth Ness, and some rocks extending from it to the north-west. Three of these rocks are always visible; the two outermost being close together and steep-to. Half a mile within them the voe is contracted to $\frac{1}{2}$ a cable in breadth, but it expands again to a size sufficient for the accommodation of a number of small vessels. The shores upon either side have no outlying dangers.

Snarra voe is immediately upon the west side of Snarra Ness; it runs in a straight direction, is clear of danger, and the sides may be closed to $\frac{1}{2}$ a cable.

DIRECTIONS.—Snarra voe should be preferred to West Burrafirth voe, for northerly winds send a heavy ground swell into the latter, and the bottom is sand. Snarra voe is more protected, and the ground is excellent for holding. In closing Snarra Ness, the rock with 13 feet upon it off the north point is cleared on its north side by keeping the Noup of Norbie, a high remarkable cliff a couple of miles to the westward, open of the

extremity of the Brough of Ness ; a vessel is to the westward of it while Snarra voe is kept open, and to the eastward of it, when the east extreme of Snarra Ness is to the westward of South. To enter West Burrafirth voe, keep in mid-channel between Snarra Ness and the rocks already described, and also through the narrows. A quarter mile above the latter, anchor rather towards the western shore in 6 or 7 fathoms. In entering Snarra voe, close the western shore so far as to have the voe open ; continue on in mid-channel, and when Snarra house on the low isthmus appears in sight, haul to the eastward, shut in the Brough of Ness by the south-west part of Snarra Ness, and anchor in 7 or 8 fathoms, muddy bottom.

A sunken rock, the Baa of Oxafirth, with 12 feet over it, lies out 2 cables from the Brough of Ness. This danger is cleared passing to the eastward, by keeping the east side of the Brough of Ness to the westward of South, and to the northward, by keeping Melby house, standing upon the south shore of Papa sound, open of the Noup of Norbie.

PAPA STOUR.—This island, only inferior in size to that of Muckle Roe, is opposite the north-west extremity of Mainland between the Noup of Norbie and Sand Ness ; it is $2\frac{1}{2}$ miles long north-west and south-east, and about 2 miles wide ; its sides are much indented, and many portions have become detached, from the constant action of the sea. Four of the largest inlets are named respectively Culla, Olas, Housa, and Hamna voes, but as they are merely small sloop or boat harbours, and are all difficult of entrance, they require no further notice.

The boundaries of Papa Stour are generally precipitous ; to the north-west are several bold cliffs, among which Bordie and the Horn of Papa are the most remarkable, the summit of the latter resembling in shape the horn of the rhinoceros : these, with Fugloe and Leera skerries close-to, are sufficient to distinguish Papa Stour from the neighbouring coast. In sailing about the island (except upon the south-east side) it is only necessary to give each point a berth of a couple of cables to pass outside all the sunken dangers.

VE SKERRIES, lying outside Papa Stour, form the extreme western point of the Shetland group, and were it not that several of the rocks are always above water and visible at a moderate distance, they would be



Ve skerries, S. $\frac{1}{2}$ E. 2 miles.

exceedingly dangerous. In the above view, the skerries are seen open of and on with Dale Ness, while the two bold islets to the left are Fugloe, and Leera skerries.

The Ve skerries occupy altogether a space $\frac{1}{4}$ of a mile long in a N.E. by E. and S.W. by W. direction ; the skerry nearest to the south-west end of the reef is the highest, being about 30 feet above high water, and about a cable in extent. The north-east skerry is 20 feet high ; between the two are narrower ridges of rock, several of which are always above water. The south-west skerry bears S.W. by W. $12\frac{1}{2}$ miles from Ossa skerry, W.S.W. $8\frac{1}{2}$ miles from Eshaness skerry, N.N.W. $\frac{1}{4}$ W. 3 miles from Fugloe skerry, N. $\frac{1}{4}$ W. 9 miles from Watts Ness, and N.E. $\frac{1}{4}$ E. 17 miles from the south point of Foula.

The sea in heavy gales makes a clear breach over the whole of these rocks, and it is then difficult to distinguish them amidst the broken water ; but in clear and moderate weather, the south-west skerry is visible at the distance of 4 miles. In the summer months, they are often visited by parties to shoot the numerous seals which frequent them at that season.

CAUTION.—No vessel should go within $\frac{1}{2}$ a mile of the Ve skerries, especially in light winds ; and before closing them in misty weather, some portion of the Shetland coast should be sighted, so that a course may be shaped with the certainty of clearing them.

PAPA SOUND, the space between the island and the shore of Mainland, is 2 miles long, east and west, by $\frac{1}{2}$ a mile broad, and is frequently used by vessels going into or out of St. Magnus bay, to avoid the round of Papa Stour. The tide-streams run rapidly through it, and it is bordered by several dangers. Upon the island side, at the distance of a cable from its south-east point, is Forwick holm ; a cable south-west of which, is a small rock which shows only at low-water springs. The Rivera Baas are some small rocks which dry at low water, $1\frac{1}{4}$ cables from the south point of Papa Stour.

Sandness Holm.—Upon the south or Mainland side of the sound, to the north-west of the Noup of Norbie, and nearly opposite Forwick holm, is the low islet Sandness holm ; $\frac{1}{2}$ of a mile to the eastward of it, and directly abreast the Noup of Norbie, is a sunken rock with only 2 feet over it at low water. At the rock, Melby house appears on with the south point of Sandness holm W. by S. $\frac{1}{4}$ S., and the north bluff of the Noup of Norbie S.W. $\frac{1}{2}$ S. $\frac{1}{4}$ of a mile.

Midsound Baas, the next danger, are N.W. by W. $\frac{1}{4}$ W. $\frac{1}{2}$ of a mile from Sandness holm, with only 9 feet upon them, and lying awkwardly in the channel through the sound. At them, the pile of stones on Sandness hill (which is elevated 811 feet) is directly over Melby house, S. $\frac{3}{4}$ W. ;

CHAPTER IV.

SHETLAND.—WATTS NESS TO SUMBURGH HEAD.

VARIATION IN 1876.

Skelda Ness - - - 22° 5' W.

From Watts Ness to Vaila island, the coast preserves the usual rocky and broken character. Foutabrough voe is the only inlet of consequence, but as it is open to the westward, and exposed to the full force of gales from that direction, it does not need description. The bold clifly coast is backed by hills of varied size and form, but in no instance presenting any marked feature which would be recognised from the offing.*

VAILA ISLAND, 3 miles from Watts Ness, and lying within a line drawn between Mucklure and Culswick Nesses, covers in Vaila sound, and bounds the entrance to Gruting voe, a land-locked and extensive harbour. From the offing, Vaila island appears to form a part of the mainland, for the passages on either side of it are narrow and winding, and only clearly distinguished upon a close approach. To obviate this inconvenience two stone beacons or piles have been erected on the summits of its two highest hills; they are about $\frac{1}{2}$ a mile apart, and bear when in line, W. by N. $\frac{1}{2}$ N. and E. by S. $\frac{1}{2}$ S. The sea-face of the island consists of irregular and bold cliffs, which may, if necessary, be approached closely. The east side is equally clear, but the north side is low, and connected to the main by a shallow flat. On an eminence upon the north-west end is a small building, from which a light was formerly shown for the use of the fishing vessels frequently Vaila sound.

Near Culswick Ness, a mile to the southward of Vaila island, the scanty remains of an ancient edifice, named the Brough or Burgh of Culswick, stands on a projecting eminence and surrounded by a deep ditch. It has been sadly dilapidated to obtain stones to build a house in a neighbouring parish, which has not only impaired the appearance of an ancient structure, but in a great measure deprived vessels approaching the coast of a useful landmark. These buildings, at one time numerous distributed over the Shetland group, and variously termed broughs, burghs, borgs, and duns, are supposed to have been erected by the Picts and Norwegians. They are arranged in such a manner as to keep up a line of communication over the whole country, and they occur in every variety of situation.

* See Admiralty chart of Shetland islands, No. 1,118; scale, $m = 0.5$ inches. Also Admiralty general chart of the North sea, from the Channel to the Norway sea, No. 2,839; scale, $d = 3.0$ inches.

VAILA SOUND is protected seaward by Vaila island, and is contained between the latter, the shores of Mainland, and Linga island lying within it. It is a mile long in a north-west and south-east direction, and $\frac{1}{3}$ of a mile broad.

Vaila sound has two entrances; the western passage, named the West sound, is between the shore within Mucklure Ness and the north side of Vaila island. At its outer end it is $\frac{1}{2}$ a mile wide, and from thence continues East for a mile to the sound, the narrowest part of the channel being abreast the middle of the north side of the island, where some rocks dry off from a point upon the Mucklure side, and reduce the navigable width of the channel to rather less than a cable. From the entrance to the narrows is a depth decreasing from 20 to 5 fathoms; then succeeds a flat $\frac{1}{3}$ of a mile broad with 2 to 3 fathoms, and in the sound there are from 6 to 10 fathoms.

The East sound is formed between the east side of Vaila island, and the steep south-west face of White Ness; the outer part of the channel between Vaila island and Muckle Fless (a rock lying out from the main north of Culswick Ness) is $\frac{1}{3}$ of a mile wide. It is free from danger, narrow, and runs straight in a northerly direction; but nearly in front of it in the sound is a small rock, named the Baa of Linga, nearly dry at low-water springs, lying $1\frac{1}{2}$ cables outside some high-water rocks at the south point of Linga. This is the only hidden danger in the main body of the sound; but dry rocks lie out from the north side of White Ness, the south and north-west sides of Linga, and also upon the north side at the inner part of West sound.

Within Linga island is Vaila voe; it has 10 to 5 fathoms in it, and is clear in every part at a moderate berth from the shore. A kirk and several substantial houses are near its head.

GRUTING VOE has the same approach as the East sound, namely, between the south end of Vaila and the Muckle Fless; but the immediate entry into the voe is between the south-east side of White Ness and the shore of Mainland, trending to the north-eastward within the Muckle Fless. The voe has a winding course eastward, north-eastward, and northward, for $3\frac{1}{2}$ miles, terminating in a broad flat, with 2 to 3 fathoms over it. The smaller voes of Olas and Selie branch off from it to the south-eastward and eastward. The entry of Gruting voe is somewhat indirect, and not more than 2 cables in width, but the sides are steep-to. The breadth increases in the body of the voe to $\frac{1}{2}$ a mile, and its sides are generally clear at the distance of a cable.

DIRECTIONS.—To pass through the West sound, keep in mid-channel until up to the narrows; pass $\frac{1}{2}$ a cable off the contracting point from the northern shore, and a cable outside a dry rock a short distance within it;

abreast this rock is the shallowest part of the channel, there being here only 12 and 15 feet water. Having crossed the shoal ground, continue on an East course for nearly $\frac{1}{2}$ a mile, and when the Burgh of Culswick appears open of the east side of Vaila island S. by E., anchor in 8 or 9 fathoms, sandy bottom. In this position a swell is experienced in westerly gales, and better shelter will be obtained by steering for the Burgh of Culswick, keeping it between Vaila island and White Ness; and when the north point of Vaila is on with Mucklure Ness, anchor in 10 or 11 fathoms in a land-locked position.

To enter the East sound with a vessel of burden, it is necessary, on account of the narrowness of the channel, to have a leading wind. The Muckle Fless is steep-to on the outside, but a sunken rock lies $\frac{1}{2}$ a cable from its north end. There are 16 feet at low water in the narrow passage within the Muckle Fless. As the shores of Vaila island and White Ness, forming the East sound, are clear to the rock edges, it is only necessary to keep in mid-channel on a general North course; and having passed the narrowest part of the channel, which is abreast the north-western projection of White Ness, then the Burgh of Culswick should be kept open to the westward of it to avoid the Baa of Linga; and when Mucklure Ness appears just open of the north point of Vaila island, anchor as before directed.

For a long stay, Vaila voe is the preferable anchorage, as it has all the advantages of an inner harbour. Proceeding to it from the anchorage in Vaila sound, steer to the southward, with the Burgh of Culswick mid-way in the opening between Vaila island and White Ness, until the eastern kirk at the head of the voe appears open of the east side of Linga, N.N.E., which is the mark to clear the east side of Linga Baa; then keep in mid-channel between Linga and the opposite shore, and having passed the island, anchor under its shelter in the middle of the voe in 6 or 7 fathoms. The head of the voe is not fit for anchorage, as it is shallow and foul.

To proceed into Gruting voe, keep in mid-channel, and having run in about $1\frac{1}{2}$ miles, a small holm will be observed off the north point of Selie voe; anchor about 2 cables to the westward of it, with the mouths of the two smaller voes open, and rather over towards the southern shore, in 12 or 14 fathoms, mud. There is excellent anchorage in every part of Gruting voe for a mile farther in, but no advantage is gained by taking up an inner berth.

In working out of Gruting voe, give the shores on either side a berth of a cable until near the narrows, when they may be approached closely, as they are bold-to. The entrance of Gruting voe is, however, too narrow to allow of anything but a smart fore-and-aft vessel working through it,

especially as there is generally a swell setting into it, and the direction and force of the wind are unsteady.

THE COAST from Culswick Ness to Skelda Ness, the western boundary of an extensive bight generally known as the Deeps, is S.S.E. $\frac{1}{4}$ E. 3 miles, and the mark to avoid the outlying dangers of the intermediate coast, is Watts Ness open of Vaila island N.N.W. $\frac{1}{4}$ W. The same mark leads across the Deeps to the entrance of the south channel into Scalloway. Gilderumple head, midway between Culswick and Skelda Nesses, is a bold precipitous holm, just detached from the main, with some remarkable pinnacle stacks standing near it. The cliffs of the head are higher than those on either side of it, and a conspicuous pile of stones stands on its summit. Skelda Ness slopes from a higher background, and is rugged. The portion of coast just described has been much wasted and broken up into numerous small bays and detached rocks, among which, are several secure boat landing-places.

SKELDA VOE, affording an outer and an inner anchorage, is an indenture $1\frac{1}{2}$ miles deep between the east side of Skelda Ness and the north-west side of Rewick Ness. Several outlying rocks are in front of the voe, and upon the east side of the entrance.

Bragin Reef, the first of these, is E. by S. $\frac{2}{10}$ of a mile from the south-west point of Skelda Ness, and about $\frac{1}{2}$ a mile off the eastern cliffs of the ness. A small portion of this reef is 6 feet above high water, but the rest of it is covered; a sunken rock lies a cable to the southward of the dry part, but with this exception the reef, which is $1\frac{1}{2}$ cables long, may be approached closely on all sides to within a cable.

The Snap, the next rock, lies $\frac{1}{4}$ of a mile off Rewick Ness; it is from 10 to 12 feet above high-water springs, and is a distinct object; between the Snap and the ness, are three rocks which dry at low water, rendering the passage unsafe for vessels. There are also two rocks off the north-west point of Rewick Ness upon the east side of the entrance to the voe, bearing from the Snap N.N.W. $\frac{3}{4}$ W. $\frac{3}{8}$ of a mile; they are always above water, and the larger, or north-eastern rock, is connected with the shore at low water. One quarter of a cable outside the smaller rock, is another which dries only at low-water springs; from this latter danger a flat with a depth of 13 or 14 feet extends for a cable, with 12 fathoms close to it.

The immediate entrance to Skelda voe, between the last-mentioned rocks and the east shore of Skelda Ness, is $\frac{1}{3}$ of a mile wide, with a depth of 10 and 11 fathoms across; $\frac{1}{2}$ a mile farther in is a small bay within the line of the western shore, having rocks in the middle of it which dry at low water. The voe extends in $\frac{2}{3}$ of a mile beyond the bay, but about

mid-way, its breadth decreases to $\frac{1}{2}$ a cable from shore to shore, with a depth in the channel of only 8 feet; but above it, the breadth increases to 2 cables, and the depth to 14 and 15 feet at low water.

Skelda voe is not generally frequented, on account of the swell which sets into it in south-westerly gales; but in winds from North to West, it is a convenient stopping-place for vessels not having sufficient daylight to reach Scalloway or the neighbouring ports.

In approaching the voe, it is only necessary to avoid the Bragin reef and the rocks already described, and having passed those off the north-west point of Rewick Ness, anchor in the voe about mid-channel in any depth, from 10 to 6 fathoms. Vessels drawing less than 8 feet may proceed to the head of the voe, where there is secure anchorage in 14 and 15 feet at low water.

SANDISTURA HOLMS, or the Score holms, as they are often termed, from there being that number of them, are a cluster of small islets and rocks above and below water, a mile to the eastward of Rewick Ness; they are intersected by several deep passages, so bounded and encumbered however by hidden dangers, as to be unsafe even to a boat. A vessel keeping about $1\frac{1}{2}$ cables outside the outer visible rocks, will be clear of all dangers.

GARDER-HOUSE VOE is between the north-east side of Rewick Ness and the west side of Kirk Ness; a small island named Kirk holm lying off the latter, and bounding the entrance of the voe to the eastward, has several sunken dangers about it, and close upon the south-west side of the holm is a large rock always above water; there is also a rock a cable S.S.E. of it, which appears only at low-water springs. The west side of the holm may be closed to $\frac{1}{2}$ a cable, but its east side must not be approached to within double that distance.

The general direction of Garder-house voe is N.N.E.; it is a mile deep, and less than $\frac{1}{2}$ of a mile wide. At its entrance, which is 3 cables broad, there is a depth of 13 fathoms, but the average navigable width in the voe is less than a cable, with depths varying from 9 to 4 fathoms. Near the head of the voe is Garder house and the manse, the former presenting its gable end to the entrance, and the latter its front, by which distinction they may be easily recognized.

In entering the voe, be careful of the sunken rock lying off the south-east side of Kirk holm. The Snap rock kept in sight outside the Noup of Rewick clears it well on the south-east side, and the manse at the head of the voe in sight, N.E. by N. $\frac{1}{2}$ N., clears it passing to the westward. Having passed the holm, keep in mid-channel up the voe, and anchor in any convenient depth. As much as 4 fathoms will be found to nearly abreast of Garder house, but the head of the voe is shallow.

Between Kirk Ness and Fora Ness is a small bay, named Sand voe, with depths gradually decreasing towards the shore from 9 fathoms in its outer part. As south-west winds blow right into it and send home a heavy swell, it is unfrequented except by fishing vessels, and they only use it with off-shore winds. The Snap rock, kept its own breadth open of the Noup of Rewick, leads into the bay. In working, the north-west side of Fora Ness may be closed, as it is clean, but the south-east side of Kirk Ness is foul for the distance of a cable, and must have a good berth given it.

The eastern boundary of Sand voe is Fora Ness, a long narrow projecting point, $1\frac{1}{2}$ miles in length, but only 2 cables broad; the rocky islet, Fora holm, lies off the ness, and is separated from it by a narrow boat passage with 12 feet in it at low water; the holm and the ness may be approached on all sides to a cable.

SANDSOUND and BIXETTER VOES.—Between Fora Ness and Rusa Ness, another bold and prominent point $\frac{3}{4}$ of a mile to the north-eastward of the former, is the entrance to one of the largest inlets of the south-west side of Shetland. The outer part, or entrance, is of a rectangular form, a mile long in a N.N.E. direction, by nearly $\frac{1}{2}$ a mile wide; it then turns abruptly to the westward for a short distance, and the shores approach each other to $\frac{1}{4}$ of a cable, from this part the width gradually increases to $\frac{1}{2}$ a mile, and the general direction is N. by E. for $1\frac{1}{2}$ miles. This middle portion of the inlet is known as Sandsound voe. Between Symbister and Long nesses at the upper end of Sandsound voe, is the entrance into Bixetter voe, a capacious and secure inland basin $2\frac{1}{2}$ miles long, and clean in every part, but the north-west extremity is shallow.

The whole of this extensive inlet is free from danger at $\frac{1}{2}$ a cable from the shores on either side. At $\frac{1}{2}$ a mile within the entrance is a moderate depth of 10 to 12 fathoms, and excellent holding ground. The narrow passage into Sandsound voe has 8 and 9 fathoms in it, and Sandsound voe from 10 to 12 fathoms, with shelter from all winds. Symbister Ness, the western point of the entrance into Bixetter voe, is fronted by a long spit which dries at low water, and limits the width of the navigable channel to a cable; to avoid this flat, it is necessary on entering to keep within $\frac{1}{4}$ a cable of Long Ness; above these points, Bixetter voe expands to the eastward and westward, and anchorage may be taken up in the body of it in 6 to 7 fathoms, mud.

The north-west portion of Bixetter voe is flat, with not more than a depth of 9 or 10 feet, and it is obstructed by several spits projecting from either shore. It is only used by the native boats, which land many passengers from the southern parts of Shetland at the head of the voe, who, by walking the short distance which separates it from Onifirth and Aith voes (from

either of which boats are readily obtained for any part of St. Magnus bay), save both the additional time and expense of the longer route by Watts Ness and Papa Stour.

WESTDALE VOE.—The entrance to Westdale voe is between Rusa Ness and Hoy, Flota, and Gruna, small islets lying off the north-west side of the long projecting point Bene Ness.

Hoy, which is E.S.E. nearly a mile from Fora holm, is nearly $\frac{1}{2}$ a mile long by $1\frac{1}{2}$ cables broad, with three smaller holms or stacks extending for 2 cables from its north-west side; and $\frac{1}{2}$ a cable outside the westernmost holm, there is a half-tide rock upon a flat of 22 feet which falls abruptly into 11 fathoms. There is also a Baa with 5 fathoms on it, lying 2 cables to the north-west of the south-west point of the island, which must be avoided in heavy weather.

Flota, $\frac{1}{2}$ of a mile from Hoy, and abreast of and nearly $\frac{1}{2}$ a mile from Rusa Ness, is of a horse-shoe form, with an irregular outline; its various points are all foul, particularly those to the westward and south-west, where the rocks dry out at low water for a cable; and $\frac{1}{2}$ a cable from the north-west and north points are detached reefs which appear only at low water. Flota is connected to Hoy by a ridge of 6 fathoms, with 11 to 16 fathoms on either side of it.

Gruna, the smallest islet of the three, is only $\frac{1}{4}$ of a cable from the north-east extremity of Flota; to the east of it are several sunken rocks; and a flat, with 2 to 3 fathoms upon it, extends north-easterly from its north-east end. Upon its outside, Gruna may be closed to a cable.

There is a passage between these islets and the north-west shore of Bene Ness, but as it is very narrow abreast Flota, and with as little as 2 feet in it at low water, no vessel should attempt it.

The principal obstruction near the entrance to Westdale voe is a reef which dries at low water, E. by S. $\frac{1}{2}$ a mile from Rusa Ness, N.W. 2 cables from the North point of Flota, and W. by N. 2 cables from the south-west point of Gruna. There is a depth of 10 fathoms close to this danger on every side.

Above these islets and rocks Westdale voe is $\frac{3}{4}$ of a mile wide, from whence it continues for 3 miles (with a breadth gradually decreasing), in a north-easterly direction, except about midway up, where it bends for a short distance to the northward, and then turns to its former direction. Towards its head, the voe is shallow and partially foul. The mansion of Sound with its outbuildings and a landing-place in front, is a prominent object on the west shore at the head of the voe.

DIRECTIONS.—In entering Westdale voe, a vessel will avoid all out-lying dangers after Rusa Ness has been passed, by keeping within 2 cables of the north-western shore. In working, the sunken rock to the north-west of Flota will be cleared passing to the westward, by keeping the north-west extremity of North Halvera island open of the westernmost of the stacks lying out from Hoy; and its north side is cleared by keeping the Snap rock on with the north-west point of Fora holm W.S.W. Having arrived where the voe turns to the northward, keep in mid-channel, avoiding a flat which extends a cable from the western point, and anchor in 5 to 6 fathoms, mud, with the mansion of Sound bearing N.N.E. $\frac{1}{4}$ E. $\frac{1}{4}$ of a mile. In this position, a vessel will be sheltered by the land, except between S.W. (southerly) and S.W. by W. (westerly), but in gales from that quarter, the swell has been reduced and rendered harmless before it reaches the anchorage.

Westdale voe is not generally frequented by shipping, but it affords excellent shelter and a safe retreat in case of emergency.

NORTH HALVERA ISLAND is near the extremity of Bene Ness, the outermost of two long narrow points of a very marked character projecting from Mainland. The island is separated from the ness by a passage with 5 fathoms in it, but it is too narrow to be used by a vessel with safety. North Halvera is high, and bounded by cliffs; a rock always above water and a flat extend rather more than a cable from its southern extremity, when the water suddenly deepens to 19 fathoms, and a cable from the north-west portion of the island is the Horse of Halvera, a rock showing only at low-water springs, and much in the way of vessels rounding the island from the north voes to Scalloway, or *vice versa*. No mark which would be identified by a stranger can be given for clearing this rock; it is therefore necessary while in its vicinity, to keep a proper distance from the island.

STROMNESS VOE is a long narrow inlet between Bene and Usta Nesses, the narrow strips or tongues of land adverted to above, the voe receiving its name from Strom Ness, the outer extremity of Bene Ness. The direction of the voe is north-east, and its length 3 miles. At its entry it is $\frac{1}{3}$ of a mile wide, but $\frac{1}{2}$ a mile within, it is a narrow passage $\frac{3}{4}$ of a cable across, in the middle of which is a rock always above water. The least water into the voe is 7 feet, at the inner part of the narrow passage, and there are also two rocks near the north-west side which appear at low water. Afterwards, the voe increases somewhat in width, and is clear of danger for $1\frac{1}{2}$ miles to another rock above water lying in the middle of the voe, which then becomes too shallow and foul for anchorage.

Stromness voe is never used except by the native sloops and boats, in consequence of its narrowness and the obstructions in it; the critical

portion of the navigation is at the narrow part within the entrance, where it is necessary to pass to the westward of the dry rock, and then to keep the eastern shore aboard until well through, to avoid the sunken dangers lying out from the north-western side.

WHITENESS VOE runs parallel to Stromness voe, from which it is separated by Usta Ness; but it is a wider and deeper inlet, and more generally available. The width of the voe at the entry, $\frac{1}{2}$ a mile, is maintained for nearly 2 miles, to where the navigation may be said to end. The only dangers are at the entrance; one sunken rock, named the Foul Baa, lies a cable to the south-west of the extremity of Usta Ness, and another, named Hirpa skerry, is near the middle of the small bight just within Usta Ness. The Kirkhouse skerry, always above water, is in the middle of the voe, $1\frac{1}{4}$ miles from the entrance. The sides of the voe are clean, and the average depth over it is 6 to 8 fathoms, muddy bottom.

In rounding Usta Ness, Foul Baa is cleared by keeping the north-easternmost of the Sandistura holms open to the south-west of North Halvera N.N.W. $\frac{1}{2}$ W., and while proceeding up the voe, give the western shore a berth of 2 cables to clear Hirpa skerry; pass on either side of Kirkhouse skerry in mid-channel, and anchor a little above it in 6 or 7 fathoms, mud.

Whiteness voe is only used when vessels have not sufficient daylight left to reach the neighbouring harbour of Scalloway, for, as a general rule, it is extremely unsafe to keep under way in the vicinity of the Shetland shore during the night.

SCALLOWAY.*—The small but secure harbour of Scalloway is protected by several islands and rocks which will be here described, as the various channels of approach to Scalloway harbour from the westward are formed between them.

Hildasay, the largest of the number, is E.S.E. $\frac{1}{4}$ S. $2\frac{3}{4}$ miles from Skelda Ness, and S.E. $\frac{1}{2}$ S. less than half a mile from the south-west Sandistura holm; it is $\frac{3}{4}$ of a mile long and $\frac{1}{2}$ a mile wide, and a few houses stand on an eminence towards its north end. Almost connected with its south-west end is the small islet Linga; $\frac{1}{2}$ a cable from the north point of Hildasay is a rock which dries at half-tide; the west and east sides of the island are clear, but the south-western point has a ledge projecting from it for nearly a cable, the outer rock of which is always above water, and the south-west sides of both Hildasay and Linga, with its small holm, the Hog of Linga, are foul, and should have a berth of $1\frac{1}{2}$ cables. The How skerry, a rock 5 or 6 feet above high-water springs, lies about

* See Plan of Scalloway harbour, scale $m = 2$ inches, on Admiralty chart of the Shetland isles, No. 1,118.

$1\frac{1}{2}$ cables to the south-westward of Linga, and rocky and foul ground, with only 3 and 4 feet over it, extends $\frac{1}{3}$ of a mile to the eastward of the skerry, and may generally be distinguished from the deep water on both sides of it. The channel between Linga and How skerry is deep, but too narrow to be used without risk.

Channes, Oxna, and Papa are the south-easternmost islands of the cluster, and are nearly in connection with one another. The Channes consists of several small holms clear to the westward and north-westward at the distance of 2 cables, and to the north-east and eastward at $\frac{1}{2}$ a cable. Oxna, of a triangular form and about $\frac{2}{3}$ of a mile long and broad, is close to the southward of Channes, with which it is connected by shallow ground and a few intermediate skerries. Except to the north-west, where skerries and ledges extend some distance, the sides of Oxna are clear at a cable. A detached cluster of rocks, named the Stags, lie 3 cables from the south-west end of it: the south-western rock is the largest, and is always above water; it is steep-to except to the eastward, where there are several smaller rocks. The Ballier skerry, an obstruction in the south channel, is a rock 5 to 6 feet above high water, nearly $\frac{1}{3}$ of a mile to the south-east of Oxna, and the same distance to the eastward of the Stags; it is very small and steep-to. Papa, the innermost island of the group, lies to the north-west and south-east, and, including an islet at the north-west end, is about a mile long; it is much indented, but by keeping a cable outside the projecting points, all dangers will be avoided.

Longa is a long narrow islet lying nearly mid-way between Linga and Scalloway Ness; it is nearly divided; the two portions composing it being merely connected by a beach a few yards across. A small house stands on the north-eastern part. Longa may be approached at the sides to $\frac{1}{2}$ a cable, but not within double that distance off its south-west end, which is foul.

Papa Skerry, lying nearly mid-way between Longa and the north-east end of Papa, is always above water; it dries out for some distance at low water to the northward and southward, but otherwise it is steep-to.

Burwick Holm lies in-shore $\frac{3}{4}$ of a mile to the north-eastward of Scalloway Ness, in front of a small bay of the same name. It is steep-to on the outside.

Whaleback, Scurvy, and Swarta Skerries are three rocks lying a short distance to the westward of Scalloway Ness, and across the middle channel into Scalloway harbour; there are, however, deep and safe passages between them. Whaleback, the northernmost, is small, and just covered at high-water springs; Scurvy skerry, the middle rock, is 12 to 15 feet above high water, $\frac{1}{2}$ a cable in length, and covered with grass; and Swarta

skerry, to the southward, is small, and only a foot or two above high water.

Green Holm is an elevated islet, 2 cables long, just to the south-west of the last-mentioned rock. It is clear on every side.

Merry Holm is a large rock, 15 feet above high water, a cable to the south-east of Green holm, to which it is connected by a narrow ridge having $3\frac{1}{4}$ to 4 fathoms over it, and 8 fathoms close to it upon each side. The South channel to Scalloway passes between Green and Merry holms.

The north-eastern extremities of the islands West Burra and Trondra, which together bound the South channel to the south-east, are clear at $\frac{1}{2}$ a cable.

SCALLOWAY HARBOUR is formed between the south-east side of Scalloway Ness and the north-east end of Trondra; and Scalloway castle and village stand prominently forward in the north-east corner of it. Upon Trondra side the shore is free of danger at a berth of $\frac{1}{2}$ a cable, but off Maw Ness, a point 2 cables within Scalloway Ness, a rock, named Willy Whites rock, lies out $\frac{1}{2}$ of a cable; and West-shore Ness, the next point above, has ledges projecting from it for the same distance. Immediately within West-shore Ness is the anchorage. That portion of the harbour to the eastward of a line joining the castle and the north-east extremity of Tondra is shallow, and only suitable for small vessels.

Scalloway, once the capital of the Shetlands, and now only second in importance to Lerwick, is well situated on the north-east point, and upon the margin of the bay or harbour. The cottages are of a better description than common, and there is a kirk and Independent chapel, and a school. The castle, built for a residence by the notorious Earl Patrick in 1600, stands prominently above the village, the outer walls of a square formal structure three stories high, alone remaining. It forms a conspicuous object from the offing, and is useful as a sea-mark.

Supplies, &c.—Water and a few supplies may readily be obtained at Scalloway. It is an important fishing station, for the purposes of which, a substantial quay and curing-houses have been provided, and the port has besides a fair amount of general trade with the small stations and hamlets upon the west side of Shetland.

DIRECTIONS.—The North Channel to Scalloway is between Sandistura holms, Burwick holm, and Scalloway Ness to the north-east, and Hildasay, Longa, and the three rocks, Whaleback, Scurvy, and Swarta, to the south-west. This channel is generally used in northerly winds; its entrance, between Sandistura holms and Hildasay, is E. by S. $\frac{1}{4}$ S. $2\frac{3}{4}$ miles from Skolda Ness; and as all the dangers in it are visible, it is only necessary to keep the prescribed distances from the points in passing. Should it be

near high water, steer towards Scalloway Ness, and round it within the distance of a cable, so as to be sure of clearing the Whaleback, and keep the same distance from the northern shore, or about mid-channel, in approaching Scalloway. The outer end of Scalloway quay, in sight outside West-shore Ness, clears Willy White's rock ; and having passed West-shore Ness, and brought the north-east point of Green holm on with it bearing W. $\frac{1}{4}$ S., and being almost midway between the ness and the village of Scalloway, anchor in 4 or $4\frac{1}{2}$ fathoms, mud.

The Middle Channel, leading to Scalloway is between Hildasay, Linga, and Longa to the north-east, and Channes, Papa, and Green-holm to the south-west ; and the entrance to it lies S.E. $\frac{3}{4}$ E. $2\frac{3}{4}$ miles from Skelda Ness. It is not generally to be preferred, on account of the skerries which are in it, but time may be saved in scant north-easterly winds by using it. The best track is between Channes and How skerry, Longa and Papa skerry, and Scurvy and Swarta skerries, or between the latter and Green holm ; and having reached the channel between Scalloway Ness and Trondra, proceed as before directed.

The South Channel, the most frequented route to Scalloway, has the Stag rocks, Ballier skerry, Oxna, Papa, and Green holm to the northward, and West Burra island, Merry holm, and Trondra to the southward. Watts Ness kept just in sight leads to it from the north-west. The Stag rocks at the north side of the entrance bear S.S.E. $\frac{1}{4}$ E. $3\frac{1}{2}$ miles from Skelda Ness, and at them Fitful head appears touching Kettle Ness, the south-west extremity of West Burra, S.S.W. $\frac{1}{4}$ W. The general leading mark through this channel is Scalloway castle seen between Green holm and Merry holm E. $\frac{3}{4}$ N., and so long as it is not shut in by one or the other, all danger is avoided. In passing between Green and Merry holms, keep rather nearer to the former than the latter, and, when clear of them, the same course continued will lead to the anchorage.

CAUTION.—The south-west extremity of West Burra has at times been mistaken for Oxna. In order to avoid this error, it is only necessary to remember that at the Stag rocks off Oxna, Fitful head is exactly on with Kettle Ness, the south-west extremity of West Burra ; whereas from the latter promontory, Little Halvera island, the next land to the southward, is well within the line to Fitful head.

There is a fourth passage into Scalloway harbour, namely, that between the west shore of Mainland and the north-east extremity of Trondra, but it has only 7 feet in it at low water, and is not more than a cable in width, and a spit, named the Scarp of Trondra extends from the western shore, reducing the breadth of the navigable channel to less than $\frac{1}{4}$ of a cable, and confining it close along the eastern shore. This passage is used only by native vessels, and a stranger would need the services of a

pilot, especially as the configuration of the channel varies from time to time.

ANCHORAGE.—Secure anchorage will be found in the vicinity of the middle channel, in the space between Channes, Oxna, and Papa. Here there is a depth of 11 fathoms, sandy bottom, and protection from all winds, except from N. by E., and should it be necessary to leave it to avoid the wind from that direction, the channel between Oxna and Papa is open and available.

TIDES.—It is high water, full and change, at Scalloway at 9h. 30m. Springs rise $5\frac{3}{4}$ feet; neaps $4\frac{1}{2}$ feet.

TRONDRA and EAST and WEST BURRA are three narrow islands lying to the south-west of Scalloway, and parallel to the shore of Mainland abreast; collectively, they occupy a space about 6 miles long, and rather more than a mile broad; West Burra, upon the outside, and covering in the other two, is separated from them by a tortuous, shallow, and encumbered boat channel, which is interrupted, midway up, by a rude bridge connecting West and East Burra.

The north-west end of West Burra, bounding the south channel to Scalloway, is clear at the distance of a cable, but lying out from the centre of the island are two prominent detached rocks, the East and West skerries, the latter an outer rock, being from 8 to 10 feet above high-water springs. There is foul ground within the skerries, and consequently no vessel should pass them on that side. The south-west and south sides of West Burra are clear at the distance of a cable.

Trondra, the smallest island of the three, is bounded on the south-east or inner side by a flat a cable in breadth; a shallow extension of which, connects the north-east end of the island with the shore of Mainland abreast, and the island is separated from East Burra by a narrow boat passage, named Stream sound.

East Burra is nearly divided towards its south-west extremity, and at this part is a small bay on the east side, with a rock, just above high water, nearly in the middle of it; with this exception, the whole of the south-east side of East Burra is direct and clean, and its south-west end is also bold to the small skerries lying out from it.

In the channel between East and West Burra, are extensive beds of excellent native oysters.

GREAT and LITTLE HALVERA ISLANDS are a mile to the south-west of West and East Burra. Great Halvera is about the same distance from the shore of Mainland; it is much worn and indented, and is triangular in form, with the base to the south-eastward. It is clear at the distance of a cable on its north-east and south-west sides, and clear and

steep-to on its south-east or inner side. Little Halvera is $1\frac{1}{2}$ cables to the westward; its south end is clean; its west side is foul for 2 cables, and North, 2 cables' lengths from its north end, and West the same distance from the north-west point of Great Halvera, are three rocks, two of which dry at low water. They will be cleared passing to the north-east by keeping the north-east side of Great Halvera in sight S.E. $\frac{3}{4}$ E., and on the outside by keeping Oxna in sight outside Kettle Ness N.N.E. $\frac{3}{4}$ E.

A small islet, named Maywick holm, is near the shore of Mainland, and abreast the south-west end of Great Halvera. It is foul upon the north and south-west sides, and it is necessary to give it a berth of a cable. There are also detached dangers near it: S.S.W. $1\frac{1}{2}$ cables from the south end of the holm, and 3 cables from the main, is a small rock which shows at low water; N.E. $\frac{3}{4}$ E., 4 cables from the holm, and a cable from the main, there is also another small rock which appears at low-water springs, and outside the latter is a rocky flat a cable broad, with 4 to 9 feet upon it.

CLIFF SOUND, bounded by Trondra, the Burra, and Halvera islands to the north-west, and by Mainland to the south-east, is a noble inlet, 7 miles long by $\frac{1}{2}$ a mile wide, and is a safe place of refuge under certain circumstances of weather. An elevated ridge in Mainland, named the Cliff hills, consisting of primitive clay-slate, descends in a steep escarpment to the south-east shore of the sound, which is nearly direct for the whole distance, and is, except in the immediate vicinity of Maywick holm, free of outlying danger to the rock edges. The covering islands on their inner side are also clear at a berth of a cable, while the depths in the sound are moderate; the ground throughout is good for holding, and the protection perfect in all winds. In strong westerly gales, and having the choice, the harbour of Scalloway is to be preferred for refuge, for the abrupt elevation of the Cliff hills having the effect of deadening the wind and causing eddies, renders safe entry uncertain. At other times no such effect is produced.

DIRECTIONS.—Having identified the south-west points of the Burra or Halvera islands, there is no difficulty in entering Cliff sound. Either of the passages north or south of Halvera islands may be used, according to circumstances, but the latter is the common route. Having entered within Great Halvera, be careful while in its vicinity to keep the remarkable stack or holm upon the north-west side of St. Ninian island open of Maywick head S.W. $\frac{3}{4}$ S., so as to avoid Maywick holm and the sunken dangers near it. Having passed them, the sound is clear to either side.

ANCHORAGE may be taken up in several places; first of all abreast the small bay in East Burra, over which stands a blue-slated house with

anchorage: with the house bearing N.W. $\frac{1}{4}$ W., and the south-east side of Great Hallowa touching the south-east side of East Barra S.W. $\frac{1}{4}$ W., there are $5\frac{1}{2}$ fathoms mud. Here there is good protection, except in very heavy north-westerly gales, when it will be advisable to proceed $2\frac{1}{2}$ miles farther up to abovea Strath sound, the channel between East Barra and Inverra, where a land-locked berth may be taken up in 7 or 8 fathoms. The latter anchorage is the more convenient one for vessels of light draft waiting tide to pass through the head of Cliff sound to Scalloway harbour.

ST. NINIAN ISLAND, a mile to the south-west of Maywick head, and 3 cables from the shore of Mainland, is, properly speaking, a peninsula, as it is joined to the main by a narrow sandy isthmus, over which the sea beats only in high tides with north-westerly gales. The island, nearly a mile long and $\frac{3}{4}$ of a mile broad, is much worn and indented; several detached portions lie out to the westward, the north-westernmost of which is useful as a mark in entering Cliff sound.

The two small bays on either side of the sandy neck are at times used by the native fishing vessels, but the space is limited, and the northern one is unsafe, except to those well acquainted with it, as there are several sunken patches with only 12 to 21 feet upon them within a line from the north-west point of the island to Maywick head. The southern anchorage, called Bigton bay, from a house of the same name standing above it, may be safely used in the summer months. To enter it, it is only necessary to give the rocks lying out from the south side of the island a berth of a cable, and then round in and anchor in mid-channel in $5\frac{1}{2}$ fathoms, sand, with the south-east point of the neighbouring island Colsay, on with the south-east side of the rocks from St. Ninian.

The small island Colsay, upon the south-west side of the bight between St. Ninian and Fora Ness, is rugged and broken, but clear at the distance of a cable outside the detached rocks surrounding it.

FITFUL HEAD.—The coast of Mainland from Cliff sound to Fitful head is bold and rocky, but clear at $\frac{1}{4}$ of a mile outside the high detached rocks



Fitful Head, S. $\frac{1}{4}$ E. 22 miles.

by which it is skirted. From Maywick head, the height of the foreland declines to Fora Ness, where it again becomes elevated, attaining in Fitful

or Fitful head (the white mountain) an elevation of 929 feet. This noble promontory, a striking object, and the first land seen when approaching the Shetlands from the south-westward, is fully deserving of the interest with which it has been invested by Sir Walter Scott in his "Pirate."

QUENDALE BAY, an anchorage within the south-east side of Fitful head, is frequently used by vessels bound to the eastward of Shetland when unable to contend against north-easterly winds, but it is not a safe stopping-place except in the height of summer, for though it is sheltered in all directions except between S.S.W. and S.W. by W., a heavy sea is thrown into it in south-westerly gales, and many wrecks have occurred in it from vessels not quitting the bay upon the first appearance of an unfavourable change.

The position of the bay is readily distinguished by Fitful head to the northward, by Sumburgh head and lighthouse a couple of miles to the southward, and by the gap which the sandy contour of the bay makes in the general line of rocky shore. Scat Ness and Cross and Horse islands defend the bay in southerly winds; and Garth Ness, the south-eastern projection of Fitful head, protects it in northerly and westerly winds.

HORSE ISLAND, immediately off Scat Ness, is bounded by inaccessible cliffs, and is the southernmost land of the Shetland group.

The only foul portions of the bay are to the northward of Cross island, from whence a reef extends for $1\frac{1}{2}$ cables; and well in the bight, between the north end of Cross island and the inner part of Scat Ness, is the Oxfoot rock, a detached ledge, appearing only at low water.

DIRECTIONS.--The entrance to Quendale bay between Garth Ness and Cross island is $\frac{3}{4}$ of a mile wide, with a depth of 15 fathoms. In running, the ness may be rounded closely, but in working in the southern portion of the bay, keep the highest part of Cross island to the southward of S.W. $\frac{3}{4}$ W., to avoid the Oxfoot rock, or Horse island open to the westward of Lady skerry, a mass of rock lying between Cross island and the shore. The other portions of the bay are clean, and may be closed by the lead. The best anchorage is in the north-west corner of the bay, within Garth Ness, with a storehouse on the shore bearing N.W. by W. $\frac{1}{4}$ W., and the south-east extremity of Garth Ness S.W. by W.; here there are 5 fathoms, sand, and the position is sheltered, except between the points above mentioned.

84 SHETLAND.—WATTS NESS TO SUMBURGH HEAD. [CHAP. IV.]

SUMBURGH HEAD and **LIGHTHOUSE**, a mile to the eastward of Horse island, are shown in the accompanying view, the island being to the



Sumburgh head. E. $\frac{3}{4}$ S. 2. miles.

left. The deep bay between them, West voe, should not be entered by a sailing vessel, as it is exposed in southerly winds.

TIDES.—It is high water, full and change, upon the shore near Sumburgh head at 9h. 45m., and the rates of the streams of springs and neaps are respectively 7 and $3\frac{1}{2}$ knots per hour; one of the features which give rise to the dangerous roost already described. About $1\frac{1}{2}$ hours before high water, the stream near the shore begins to run to the westward from Sumburgh head to Fitful head. The general direction of the flood is S. by E., or from Fitful head to Horse island; but after running 3 hours, it gradually trends to South, S. by W., and S.S.W., until high water by the shore; it then turns westerly, and, uniting with the in-shore eddy stream above alluded to, it sets to the north-west until low water by the shore. A vessel bound to the westward, by taking advantage of the in-shore tide, may thus have $7\frac{1}{2}$ hours in her favour.

CHAPTER V.

ORKNEYS.—SEA MARGIN AND APPROACHES.

 VARIATION IN 1876.

 23° 0' W. to 22° 20' W.

DESCRIPTION.—The Orkneys,* a name which is probably derived from Orch (outwards, extreme, or bordering), and ey (island), are a group of islands separated from the north-east extremity of Scotland by the Pentland firth, a strait $5\frac{1}{2}$ miles wide, noted for the rapidity of its tide-streams, and the consequent dangerous character of its navigation.†

The Orkneys are included between lat. $58^{\circ} 41'$ and $59^{\circ} 23' N.$, and long. $2^{\circ} 23'$ and $3^{\circ} 26' W.$; they are fifty-six in number, twenty-nine being inhabited,—the principal of which are Mainland or Pomona, Hoy, Sanda Westra, Rowsa, South Ronaldsha, Eda, Shapinsha, Stronsa, and North Ronaldsha. Hoy is the only island of the group that can be considered mountainous, and here the elevation reaches in Hoy hill 1,556 feet above high water; a few of the other islands have hills of moderate height; but they are for the most part low, especially the north-easternmost of the group. There is a considerable variety in other respects; in some instances the coasts are bold and rocky, in others they are flat and sandy, while nearly throughout there is great irregularity of form, a result of the constant wearing action of the sea, which has caused the islands to present a series of crooked and jagged peninsulas projecting in all directions, rather than a group of compact insular bodies.

The Orkney islands are about fifty-six in number, of which only twenty-nine contain human habitations. The remaining twenty-seven, called *holms* (which is the generic word for a small island), are chiefly used for pasturage, but some are quite deserted, being overflowed by the tide at high water. These last, and a few others which have little or no soil on them, are called *skerries*, a word which means sharp, rugged rocks. The most notable of these are the Pentland skerries, two small islands in the

* For the Natural History of the Orkneys, see "Historia Naturalis Orcadensis, Part I.," by W. B. Baikie, M.D., and Robert Heddle. 1848.

† See Admiralty chart of the Orkneys, No. 2,180; scale, $m = 0.5$ inches. Also Admiralty charts of the British islands, No. 2; scale $d = 1\frac{1}{2}$ inches; Scotland, east coast, sheet V., No. 2,181; scale $d = 15\frac{1}{2}$ inches; and North Ronaldsha firth, No. 2,569; scale, $m = 2\frac{1}{2}$ inches.

Pentland firth, lying close together, on which are two lighthouses, and on which five families reside. The most southerly of the islands except the skerries, and Stroma, which is about the middle of the firth, and belongs to Caithness, is South Ronaldshay, and North Ronaldshay is the most remote to the north. It will be observed that nearly all the names end in "ay" or "ey" or "a," which are all said to be the different forms of a Gothic termination which means a large island, as *holm* means a small one, fit only for pasturage. Of the whole fifty-six islands Pomona or the mainland is much the largest, its greatest length from east to west being 30 miles, and its greatest breadth near its western extremity 16 miles. Towards its eastern extremity it narrows to 6 or 7 miles, and between the bays of Kirkwall and Scapa it contracts into something about a mile and a half. Kirkwall, the capital of the islands, is a royal burgh, containing about 4,400 inhabitants, and its charter was granted by King James III. of Scotland.*

APPROACHING THE LAND.—In approaching the islands from the westward in clear weather, the various prominent objects may be readily distinguished; and from the southward, the Ward hill of Hoy can be seen at the distance of 42 miles, and is readily known from any other of the hills in Orkney, or from the Paps of Caithness, by the sudden fall or cliff-like appearance of the west side, and by a small conical lump on the south end of the long ridge which slopes gently from the highest point.

GENERAL DIRECTIONS.—With a fair wind and clear weather, there is no difficulty in navigating in the vicinity of the Orkneys; but, with the exception of about two months in the year, namely, from the middle of June to the middle of August, gales of wind and thick weather are of frequent occurrence, and it requires more than an ordinary degree of vigilance to insure the safety of a vessel. The numerous wrecks, however, prove not only the difficulty of Orkney navigation, but too often the negligence and inefficiency of the master of the vessel. At one time a vessel has been known to run ashore from having been laid-to with her head towards the land in a strong gale and thick fog; another runs upon the Reef-dike after having sighted the Start, only 4 miles distant; some, again, lie-to for days together, and suffer themselves to drift helplessly to destruction. Vessels are subjected to too many unavoidable casualties in these latitudes to have them unnecessarily increased. Constant vigilance on the part of those in charge is of the first importance, for without it, neither instructions nor experience will avail.

In the latitude of the Orkneys, little dependence can be placed upon getting astronomical observations, but no opportunity should be neglected

* Orkney Herald, 1861.

of obtaining at least an approximate latitude. The most important part of the dead reckoning will be the allowance for the influence of the tide-stream, and the deep-sea lead should never be neglected, for it may be assumed with tolerable certainty, that its frequent use would prevent more than half of the wrecks which now take place; the majority of which occur in bad weather, either in scudding before a gale, or when the sail has been so reduced that the vessel is doing little more than lying-to, and when soundings would have been easily obtained.

The difficulty of navigating in the vicinity of the Orkneys varies, of course, with the season of the year. For 116 days there is, properly speaking, no night—an advantage every seaman can appreciate. Neither does the sea, from the middle of May to the middle of August, rise to the height it does in the winter months; then, the rapid tide-streams running round the north end of the Orkneys, and throughout the whole space between that group and Shetland, raise a sea dangerous to vessels contending against it, and it is the more prudent course under such circumstances, to seek shelter among the Orkneys. Hoy head and Noup head upon the west side, and Copinsha and Pentland skerries upon the east side, are points not easily mistaken. The Noup of Westra once recognised, renders the harbour of Pierowall available for shelter, without any other assistance than the following directions afford. In easterly winds, the well-marked islet Copinsha is equally useful as a landfall for distinguishing the position of Deer sound—another excellent harbour, possessing ample space and a clear approach.

Respecting temporary anchorages, a great difference should be made according to the season of the year. From May to August it will be sufficient if a vessel anchor well out of the stream of tide, for the nights are then seldom so dark as to prevent her getting under way with a shift of wind; but in the other portions of the year, some land-locked harbour should be secured before night-fall. When, however, from adverse wind or tide, this cannot be effected, the most sheltered part of the nearest roadstead and the best holding ground should be selected, so as to prevent being driven away from the anchorage by an off-shore gale.

For the use of vessels going round the Orkneys and not crossing amongst them, a brief description will be given of the prominent points of the western coast; then of the eastern coast; and afterwards a few necessary directions for sailing about them, with the precautions to be observed for avoiding them in thick weather.

WESTERN COAST of ORKNEY.—The navigation of the western side of Orkney, unlike that of the eastern, is attended with but little difficulty, for instead of long low points stretching seaward, the greater portion of it is bold and direct.

NORTH SHOAL.—The whole of the western coast is free of outlying danger, with the single exception of the North shoal, which must always be a cause of anxiety to the navigator, particularly in thick weather, on account of its singularly detached position, the little water there is over it, and the heavy sea which bursts upon it, especially during and after gales from the westward. The North shoal is a bank of 20 and 25 fathoms, having on it a small and nearly perpendicular rock, which rises to within 7 feet of the surface of low-water springs. The summit of the rock is not more than half the size of a boat, the lead falling off it into deeper water. Around the rock there is a small patch with 12 to 18 feet upon it, but it does not extend for more than 20 yards in any direction, when the depths increase to 8, 13, and 16 fathoms; but the bottom in the vicinity is very uneven, and as far as $\frac{1}{4}$ of a mile to the north-east of the peak, casts of from 9 to 16 fathoms may be found. The south-west side of the rock is very steep, there being a depth of 20 fathoms within a ship's length. On the north-west, south-west, and south-east sides, the water quickly deepens to 30 fathoms; but a mile to the north-east there is as little as 20 fathoms, and at 3 miles 30 fathoms. Half way between the shoal and the Brough of Birsa, in Mainland, there are 40 to 45 fathoms, stony bottom. At the same distance to the E.N.E. of the rock there are 55 fathoms, broken shells, and to the W.S.W. there are 80 fathoms, fine oozy sand; but with the same radius ($4\frac{1}{2}$ miles) to the S.S.W. there are only 35 fathoms, rock.

The North shoal is in $59^{\circ} 13' 23''$ N., and $3^{\circ} 34' 45''$ W., and from it, the various prominent points of Orkney bear as follows:—Noup head, Westra, East (southerly), 17 miles; Costa head, North Mainland, S.E. (easterly), $12\frac{1}{2}$ miles; Brough of Birsa, S.S.E. $\frac{3}{4}$ E., 9 miles; Black craig, near Hoy sound, S. $\frac{1}{4}$ E., 16 miles; and the Old Man of Hoy, S. by W., $20\frac{1}{2}$ miles.

There are no good thwart marks for the rock, and it requires a clear day to make use of those known to the fishermen, but neither in fine nor coarse weather are indications wanting of its position, for in the former case the ripple of the tide as distinctly points it out, as the bursting sea in the latter.

The direction of the flood stream past the rock is E. by S., and that of the ebb stream W. by N., and the rate of springs is 2 miles per hour, and of neaps about 1 mile. The effect of the tide-stream over the North shoal, and about the Orkneys generally, is quite disproportioned to its rate, a much greater turbulence being caused thereby than is usually the case.

To pass 10 miles to the northward of the North shoal, the Noup of Westra must be kept to the southward of S.E. $\frac{3}{4}$ E., and to clear it the same distance to the southward, Hoy hill must be kept to the eastward of

S. by E. While the Brough of Birsa is to the southward of S. by E., a vessel will be 5 miles to the northward of the rock, and she will be an equal distance from it to the southward while the Brough is to the eastward of E.S.E. $\frac{1}{4}$ S.

Vessels coming from the westward may, if the weather be clear, run for the Noup of Westra upon the parallel of $59^{\circ} 20'$, but they must be careful not to be to the southward of that latitude to avoid the North shoal. Fitty hill, the highest land of Westra, may be seen 28 miles off. In winter, when the nights are long and dark, it will be prudent to keep to the northward of the latitude of Fair isle ($59^{\circ} 33'$), so as to insure passing clear of the Orkneys.

The western coast of Orkney is well marked by prominent objects.

THE NOUP HEAD of WESTRA is 240 feet high, and exhibits a range of fine cliffs (a view is given on page 122). It may be seen at the distance of 20 miles. The Brough of Birsa bears from it W.S.W. $\frac{3}{4}$ S. 14 miles. From the Noup of Westra the coast trends southerly into Westra firth, of which the Noup may be considered as the north point.

THE BROUGH of BIRSA is connected with Mainland by a reef that dries at half tide, but it usually appears as an islet lying a short distance from the shore. It is only 95 feet high; but as there is a remarkable triangular shaped rock nearly joining the foot of the cliff, and the perpendicular cliff, Marwick head, 263 feet high, is only 2 miles to the southward; the Brough of Birsa may be easily recognised.



Brough of Birsa. S.W. by W. $\frac{3}{4}$ W.—2 miles.

The sandy bay of Skail is the only interruption to the rocky coast of the western side of Mainland, the highest part of which is the bold cliff, Black craig (400 feet), immediately to the northward of Hoy sound. The west side of Hoy consists of a range of high red cliffs, varying from 500 to 1,000 feet in height, except where the land falls into the small rocky bay of Rackwick. Hoy head, which is elevated 1,000 feet may be known when seen from the northward or southward by a detached perpendicular stack, called the Old Man of Hoy.

The whole of the western coast, from the Brough of Birsa to Berry head, in Hoy, a distance of 20 miles, is bold, high, nearly continuous and steep-to, and although between the Brough of Birsa and the Noup of Westra the land falls in to the south-east, so as to have a broad and open firth; yet the coast on both sides is so high, that it will generally be seen in time to prevent any mistake.

EASTERN COAST of ORKNEY.—From the Mull of Papa Westra to Seal skerry, at the north-east end of North Ronaldsha, is E. by S. $\frac{3}{4}$ S., 15 miles; and this line of bearing leads $1\frac{3}{4}$ miles to the northward of the Runa-brake.



Dennis Ness—Beacon—Lighthouse.

NORTH RONALDSHA ISLAND.—The island of North Ronaldsha is, in its highest part, only 48 feet above high water. Dennis ness, the north-east extremity, low and rocky, is in $59^{\circ} 23' 2''$ N., and $2^{\circ} 22' 2''$ W.; it is distinguished by a beacon.

LIGHT.—The lighthouse is built of brick and situated on a small eminence near the north part of the point, about half a mile from the beacon; it exhibits, at an elevation of 140 feet above high water, a *bright* light, which *flashes* every 10 seconds, and may be seen 17 miles distant in clear weather.

Seal skerry, which is close to the lighthouse, must be carefully avoided, as the tide runs strongly over it.



Start point, N.N.E. $\frac{3}{4}$ E. 2 miles.

START POINT.—The Start, the next point to the southward, is one of the most dangerous in Britain, and before the erection of the lighthouse, many vessels were wrecked upon it. Two-thirds of Sanda, or 7 miles of it, stretches out as a long point, no part of which is more than 60 feet above high water, while many portions of it are but little above the level of the highest tides; the houses on it are, consequently, the more conspicuous objects, and very little haze serves to obscure the whole. The Start point is a small flat islet, connected to Sanda at half tide. In 1802, a tower was built on it to serve as a beacon, which, in 1805, was converted into a lighthouse, and first used as such on the 1st of January 1806.

LIGHT.—The Start lighthouse is built on the east point of Sanda island, is coloured white, and exhibits, at an elevation of 100 feet above high water, a *fixed red* light, which should be visible in clear weather from a distance of 15 miles.

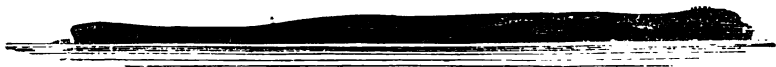
TRES NESS is a low peninsula, forming the western extremity of Tres Ness bay; there is a barrow or mound upon the west side of it, but not very conspicuous, and a large farm-house stands at its inner end. The bay, which is 5 miles across, is sandy throughout, and bounded in places by sand-hills. The larger proportion of wrecks upon the eastern coast of

Orkney take place in it, for in hazy weather the land can scarcely be seen until it is too late to clear it on either tack.

From Tres Ness the land trends to the westward, where the holm of Huip may be recognised by its conical outline; it is about 60 feet high with a barrow on its summit. It will be fortunate for the mariner who may be caught here in easterly gales to be able to distinguish it, for upon the west side of the holm is an excellent anchorage in 4 or 5 fathoms, oozy bottom.

Sanda sound is between Tres Ness and Papa Stronsa; the latter is a small flat islet, which, when seen from the eastward, appears to be part of Stronsa, but a windmill and a large white farm-house with outbuildings serve to distinguish it.

BURGH HEAD, in Stronsa, 114 feet high, is a well-marked object.



Burgh Head, S.S.W. $\frac{3}{4}$ W. 6 miles.

AUSKERRY, a flat green islet, a little farther to the south-westward, might, in thick weather, be easily mistaken for the Great Pentland skerry, were it not that on the latter there are two lighthouses, whereas on Auskerry there is only one. The south part of Stronsa has also a considerable resemblance to the south part of South Ronaldsha, but Lamb head is unlike Old head, and the cliff Stow head has no counterpart in Stronsa, the middle of which is low.



Auskerry, N.N.E. $\frac{3}{4}$ E. 4 miles.

LIGHT.—The lighthouse on Auskerry is situated on the south part of the island, is built of white bricks, and exhibits, at an elevation of 110 feet above high water, a *fixed bright* light, which should be visible in clear weather from a distance of 16 miles.

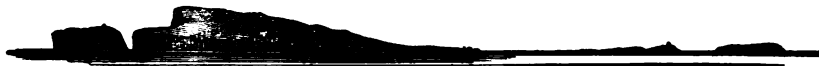
The MULL of DEERNES, as its name implies, is a high and bold promontory, with no dangers near it but what are visible, and the bearing of Copinsha, S. $\frac{3}{4}$ W. $4\frac{1}{4}$ miles, will, in most cases, serve to identify it.



Mull of Deerness, W. by N. $\frac{3}{4}$ N. 2 miles.

Stronsa firth opens between Aukerry and the Mull of Deerness, and vessels sometimes enter it in thick weather without seeing the land upon either side. In this case, the east coast of Shapinsha is the land that will be first sighted; the Foot is a high perpendicular cliff, but the rest of the coast is low; it is, however, clear of outlying dangers.

COPINSHA, an islet S.W. (southerly) $24\frac{1}{4}$ miles from the Start lighthouse, and N.E. $\frac{3}{4}$ E. (easterly) $14\frac{3}{4}$ miles from Pentland skerries, is an



Copinsha, S.S.W. $\frac{3}{4}$ W. 3 miles.

excellent landmark for the eastern coast of Orkney. It presents to the eastward a perpendicular range of cliff, 211 feet high, from which it slopes



Copinsha, N. $\frac{1}{4}$ W. 4 miles.

to the westward, so that when viewed in profile, its outline is a right-angled triangle. Copinsha can never be mistaken for any other part of Orkney, as there is a square stack rock, called the Horse of Copinsha, perpendicular on all sides, and 59 feet high, at the distance of $\frac{1}{2}$ a mile from its north end.

In to the north-west of Copinsha is the small bay of Sandisend, having at the head of it a low sandy isthmus, over which the sea breaks in stormy weather. This isthmus, separating Deer sound from the bay of Sandisend, is not visible a few miles off, and the apparent opening has often been mistaken for the entrance to Holm sound. To avoid being embayed, Copinsha must not be brought to the southward of E. by S. which is the bearing of the islet from Rose Ness, the north-east side of the entrance to Holm sound; but a far surer mark for this passage, and one which will prevent Sandisend bay being mistaken for it, is the Horse of Copinsha kept open to the eastward of the holms of Copinsha until Holm sound has been opened.



Copinsha; the Horse, E. $\frac{3}{4}$ N.

GRIM NESS, at the north-east part of South Ronaldsha, is a rocky point 50 feet high; there is a great similarity between it and Rose Ness, and it is to be regretted that a beacon has not been placed on the latter, so as to distinguish it in thick weather. Stow or Stowse head, about midway

along the coast of South Ronaldsha, never appears as a point, but it is the highest portion of cliff in the island. It is in the bight between Grim Ness and Halcro head; upon its north side is a sandy bay, and farther northward, the kirk and manse stand upon a low rocky shore, within which there is some amount of arable land.

HALCRO HEAD, a couple of miles from Stow head, is a bold headland, bounded by perpendicular cliffs trending to the north-westward into Windwick. Care must be observed not to mistake this head for that of Duncansby, an error which has sometimes proved fatal. There not being a stack here as at Duncansby should excite suspicion, besides, the land does not fall in from Halcro head for more than a mile, and the high cliffs of Stow head, a little to the northward of it, will, with common attention, be seen in time to prevent accident. Should, however, a vessel have run so far down upon the coast as to be unable to weather Old head, then she should endeavour to weather Stow head, and beach in the sandy bay to the northward of it, as affording the best chance of saving the lives of the crew.

OLD HEAD is not a bold point, as it rounds down considerably towards the cliffs, which are only about 60 feet high. It is possible to mistake Grim Ness for it, but as the Pentland skerries are only $2\frac{3}{4}$ miles off, suspicion will be excited if they cannot be seen.*

DIRECTIONS.—From the westward, there is no particular difficulty in going north of the Orkneys, in passing through between the islands, or to the southward of the Pentland firth. A departure from cape Wrath or from any other of the promontories upon the north coast of Scotland, would always ensure a landfall being made with precision; afterwards, the bold character of the western shores of the group, and their nearly entire freedom from danger, render navigation in their vicinity comparatively easy. But the case is altogether different when rounding the Orkneys in thick weather, either from the southward or eastward, and the following brief instructions have, therefore, special reference to these latter circumstances.

Closing the ORKNEYS from the southward.—From Kinnaird head lighthouse to Pentland skerries lighthouses is N. $\frac{1}{4}$ W. (westerly) 66 miles; to Copinsha N. $\frac{3}{4}$ E. (northerly) 75 miles; and to the Start lighthouse, Sanda, N. by E. $\frac{1}{2}$ E. (northerly) $95\frac{1}{2}$ miles.

Should a vessel, bound through the Pentland firth, have run her distance to it from Kinnaird head and then meet with thick or foggy weather, it will

* For a description of Pentland skerries, Duncansby head, &c., see North Sea Pilot, Part II., Chap. II.

be prudent to shorten sail and heave to, for it would be difficult, under such circumstances, to distinguish between the coasts of Caithness and Orkney—between Duncansby and Old heads—and a mistake would probably be fatal. Having hove-to, soundings should be obtained; if the depth is from 40 to 45 fathoms, the land will be at least 5 miles to the westward; rocky bottom would show the vessel to be in the stream of the Pentland firth, and fine sand, to the northward or southward of it. Should the weather continue so thick as to prevent the firth being run for without risk, a course should be shaped for going round the Start. From Pentland skerries to Copinsha is N.E. $\frac{3}{4}$ E. (easterly) $14\frac{1}{2}$ miles, and, consequently, by steering that course, a vessel will pass as far to the eastward of Copinsha as she was to the eastward of the Pentland skerries, and the same course may be continued until the whole distance to the Start has been run. To make the course good, it is necessary in bad weather to have the wind a point free, that is, it should not be more to the eastward than S.E. $\frac{1}{2}$ E., a circumstance that must be borne in mind when thick weather is coming on, or is apprehended.

Wearing the ORKNEYS from the eastward—Vessels coming from the eastward will do well to sight Fair isle, and, if the weather is not fine, to shape a course so as to pass through “the Hole,” the passage between Fair isle and Sumburgh head; for the south end of Shetland being very high, will at all times be seen at a much greater distance than the low land of the north of Orkney, while the light on Sumburgh head may also be seen at twice the distance that those on the Start and Dennis ness are visible.

Fair isle, (a full description of which is given in page 4,) shows 33 miles off in clear weather, and as its outline is too remarkable to admit of its being mistaken for any neighbouring land, it serves by day as an excellent beacon for the above passage; at night, however, or when, from thick weather or other cause, uncertainty may exist, great caution will be necessary. Supposing Fair isle to be in the course of the vessel, and Sumburgh head light in sight, so long as the latter is to the northward of N.E. $\frac{1}{2}$ N., the vessel will be 5 miles to the eastward of the isle, and she will be the same distance to the westward of it while the light is to the eastward of E.N.E. In very thick weather it will be prudent to heave to, or to shorten sail and proceed slowly, guided by the soundings.

SOUNDINGS.—Respecting the soundings, there is one fact of great practical utility; the line of 35 fathoms runs nearly straight along the whole of the eastern side of Orkney, and it is also important to remember, that it does not bend into the firths or bays. Its direction is E.N.E. $\frac{3}{4}$ N., or parallel to the general run of the coast, and its average distance from

the various headlands is 3 miles ; so long, therefore, as a vessel is in a greater depth of water, she will be at least a moderate berth outside all the projecting points.

At from 4 to 10 miles off shore, as far north as the latitude of Lamb head, the depths are from 40 to 45 fathoms, and the bottom is a fine clear sand with a very regular surface, for 50 fathoms is only found 12 miles from the land, and the nature of the bottom is the same throughout.

In-shore, to the northward of Lamb head, the depths and the quality of the bottom are more variable. Within the line of that head and Start point, that is, in the deep bay or sound between Stronsa and Sanda, the greatest depth is 23 fathoms, and the bottom affords no guide, as it varies continually between patches of rock, sand, and broken shells. It is, however, of advantage to know that when a vessel is in a greater depth than 30 fathoms she is without the limits of this dangerous bay.

About 4 miles to the eastward of Lamb head there are 40 fathoms over fine sand ; further to the northward there are broken shells, and on nearing the Start, the bottom is rocky, with coarse fragments of mussel shells. Three miles off the Start there are from 38 to 40 fathoms over rocks and broken mussel shells.

Upon the east side of North Ronaldsha, $2\frac{3}{4}$ miles from the shore, the ground is rocky and uneven, and the depths are from 24 to 40 fathoms, and about 3 miles to the north-eastward of Seal skerry, the depth is 30 fathoms over a bottom of similar quality.

By attending closely to the foregoing description of the depths and the nature of the bottom, it will be easy to pass to the eastward of the Orkneys in thick weather with safety. Thus, a vessel being caught in a fog or misty weather when within 15 miles of Pentland skerries, and having about 35 fathoms over a sandy bottom, will, by steering E.N.E. $\frac{3}{4}$ N., quickly deepen the water to 40 fathoms, and it is only necessary to keep in that depth to pass round the Orkneys.

TIDES.—The mean rise of the tide at springs in the north isles of the Orkneys is 11 feet 2 inches, and at neaps 7 feet 11 inches; neaps range 4 feet 6 inches. In the south isles the mean rise at springs is 10 feet, and at neaps 7 feet; neaps range 4 feet. Extraordinary springs may be 3 feet 4 inches above or below the mean. The tide-stream upon the eastern coast of Orkney is weak, seldom exceeding $1\frac{1}{2}$ knots in springs, except in the neighbourhood of Pentland and Stronsa firths, in the wake of which, during the flood, roosts generally extend for some miles seaward; but round the north end of Orkney the tide-stream passes with great velocity. Off the Start and Dennis ness, there is a heavy bursting sea when the direction of the stream is against the wind, so that in most cases these

CHAPTER VI.

ORKNEYS.—NORTH SOUND AND NORTH RONALDSHA FIRTH.

VARIATION IN 1876.			
Noup Head	- 22° 55' W.		Dennis Ness - 22° 30' W.

The North Sound, contained between Westra to the westward and Sanda to the eastward, is sometimes called "the Sand," from its having a sandy bottom nearly throughout; the average depth is 25 fathoms, and the tide-streams in it are very weak.*

WESTRA, NORTH SIDE.—Noup head, or, as it is more commonly termed, the Noup of Westra, the north-west extremity of the island, is a promontory, $1\frac{1}{2}$ miles in length, shelving and low to the northward, but bordered to the south-westward by bold cliffs, increasing in height towards the Noup, which is 240 feet high, and, therefore, a conspicuous and easily distinguished object. As is commonly the case with bold headlands, but few wrecks occur near it.

Under the north-east part of the Noup are several flat skerries, named the Lees, or Lois; they are close to the shore, and always above water.

Backwick, a bay between Our Ness and the peninsula of Aikerness, is nearly filled up by a broad flat shelf or reef, the sea-weed on which shows at low springs, and there is as little as 6 or 7 feet upon it at $\frac{1}{2}$ a mile from the shore. Vessels should avoid this dangerous bight, in which the sea often breaks in 12 fathoms. In moderate weather, they will pass outside all its dangers by keeping the cottages of Noup, or the clear yellow sandy margin of Noup bay, open of Our Ness. In Noup bay there is no anchorage.

Bow and Holm of Aikerness.—The Bow of Aikerness is a flat skerry lying out to the north-east of Bow head, and nearly joined to the shore at low water. As the tide-stream runs rapidly over and past this rock, vessels should keep well to the northward of the line of Noup and Mull heads. The Bow is cleared to the north-west, by keeping the sandy strand of Noup bay in sight outside Our Ness.

The Holm of Aikerness, or Aikerness skerry, situated towards the middle of the north entry to the sound between Westra and Papa Westra,

* See Admiralty charts:—Orkney islands, No. 2,180; scale, $m=0.5$ inches; and North Ronaldsha firth, No. 2,569; scale, $m=2\frac{1}{4}$ inches

dries for $\frac{3}{4}$ of a mile at low water, and is then connected with the shore of Aikerness. At high water, three small patches only of it are visible; the two northernmost are grass-covered, the third, named Shell holm, is bare and sandy; reefs dry out from the latter for 2 cables, and the whole of the south side is very flat; a sandbank, with 6 to 11 feet upon it, skirting the shore for more than a mile to the southward.

The southern portion of the sound between Westra and Papa Westra, is a harbour of refuge to vessels prevented by contrary winds from passing to the northward of the Orkneys, but that which constitutes its safety as an anchorage takes from its value as a channel, for the navigation is intricate and shallow, and in strong westerly winds, a dangerous roost is formed at the northern entrance.

PAPA WESTRA has its north-east extremity at Mull head, or the Mull of Papa, a headland 100 feet high. A reef extends from its north side, across which, the tide-stream rushes with great impetuosity to within a boat's length of the shore. There is generally a bad roost off the Mull, named the Bore, which extends in westerly winds and during the ebb stream, for some miles to the northward. The bottom is rocky and uneven, and the sea breaks in 20 fathoms. The Bore is exceedingly dangerous, especially in the hard gales of winter; during summer, and in moderate weather, vessels may pass within $\frac{1}{2}$ a mile of the head in safety.

Roost.—The dangerous tideway mentioned as existing between the Mull of Papa and Aikerness, at the north entry to the sound, is termed the Roost, to distinguish it from the Bore.

CAUTION.—The passage from the westward round the north end of the Orkneys, is rendered somewhat treacherous by the peculiar set of the tide, for as the body of the flood stream comes from the north-west, a vessel must be 6 or 7 miles to the northward of the Mull of Papa to drift clear of North Ronaldsha. The first half of the flood sets from the Mull right for North Ronaldsha (E.S.E. $\frac{1}{4}$ S.), and should the wind fail while the flood is running there would be a great probability of the vessel drifting ashore.

The flood stream passes slowly the north coast of Westra, (sending a weak off-set between Papa and Aiker Ness,) and joins the main stream and the Bore off Mull head. The tide here runs about 6 knots, and between Papa and North Ronaldsha 3 knots, but near North Ronaldsha the rate again increases to 6 knots.

On North Ness, a low rocky point, is a sheep-pen, appearing at first sight as the ruin of a Mortella tower. Abreast it are some sunken ledges lying out from the shore, which, from the Mull to the holm of Papa, should have a berth of $\frac{1}{2}$ of a mile.

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ORKNEYS.—NORTH SOUND AND Papa sound, capable of admitting
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is between Moclet point and Vest Ness, the south
 points of Papa Westra, and affords safe anchorage in
 as the shores are clean and the bottom is good.
 within the line of the points there are 5 and 6 fathoms,
 the water shoals gradually towards every part of the shore.

the south-west point of Papa Westra, has a reef extending
 from it for nearly 2 cables; and a mile to the northward of it, off the
 cottage of Bakaskal, is the skerry of Bakaskal, a rocky shoal, joined to the
 shore at low-water springs, and fronted to the westward and south-westward
 by an extensive sandbank, which, with the holm of Aikerness, bounds the
 anchorage of Pierowall to the northward.

WESTRA, EAST SIDE.—The east side of Papa Westra is clear and
 bold to within the distance of a cable, but the eastern coast of Westra on
 the contrary, is not by any means to be made free with.

Stangar Head, the only bluff upon the east side of Westra, presents a
 front of bold cliffs 150 feet high; to the southward, a range of cliffs
 extends to Weather Ness, clear to the rock edges. Upon the north side of
 the head, the land falls into the rocky bight of Rackwick, and from thence,
 the coast of Westra is indented by a succession of shallow bays as far as
 Pierowall, and for the whole extent the shore is fronted by rocky ledges.

SKELWICK SKERRY is a detached rock awash at high water, but at
 low-water springs it dries for 2 cables; the water is shallow, and the bottom
 uneven about it, and the northern extremity of it is a sunken reef, a cable
 long, and named the Bow. Between Skelwick skerry and the Little skerry
 within it, there is a depth of 18 feet at low water, but it is no passage for
 vessels. From the highest point of Skelwick skerry, Stangar head bears
 South $1\frac{3}{4}$ miles; the mansion of Cleat N.W. $\frac{3}{4}$ W. 2 miles; windmill on
 Papa Westra N. by E. 3 miles; and the holm of Papa N.E. by N. $\frac{1}{2}$ N.
 rather more than $3\frac{1}{4}$ miles.

The pile on Erival hill well open of the point upon the west side of the entrance into the harbour of Papa Westra, clears Skelwick skerry passing he eastward; the point of Aiker Ness, in Westra, shut in a little behind Ness clears its north-east side, and the mansion of Cleat open to the yard of the Store on Spo Ness leads to the north-westward of it.

skerry is greatly in the way of vessels bound to Pierowall, and have a beacon upon it, as the marks for avoiding it cannot be seen in misty weather. Within the skerry is Skelwick, where coasters occasionally anchor in the summer, but the ground is rocky, and the place unsafe.

The next point to the westward is Spo Ness, on which there is a slate-roofed storehouse, and it is fronted by a reef extending $1\frac{1}{2}$ cables from the shore. The same leading-mark clears this and the reefs off the adjacent points of Snook and Cleat, namely, Noltland castle on with the cots upon the point of Skafha N.W. by W., or Noltland castle open to the northward of Brough store.

A reef of 3 cables'-lengths extends from Snook point, with deep water close to the end of it; at high water the reef is covered, and very deceptive. Besides the marks given above for clearing it, the houses of Brough kept open of the point of Cleat, leads outside it to the northward.

The bay of Cleat takes its name from the mansion of Cleat, a conspicuous object on the shore, and affords good anchorage with off-shore winds. The point of Cleat, between Cleat bay and the shallow rocky bay of Brough, must have a berth of 2 cables given it.

PIEROWALL HARBOUR.*—From the point of Brough, a broad flat extends to the north-east for nearly $\frac{1}{2}$ a mile, forming the south side of the entrance to the harbour of Pierowall, and adding materially to the difficulty of navigating it. In the outer harbour there are 3 and 4 fathoms, muddy sand, but the inner harbour, or head of the bay, is nearly filled with sand, having a depth of only 3 or 4 feet over it. The anchorage in the outer harbour is a little within the storehouse of Brough, and rather towards the north side, where vessels may lie in all winds. Within this position, the water shoals quickly, and between the points of Gill and Skafha there is only a depth of 16 feet. The entrance into the outer harbour is contracted to 3 cables by the flat from Brough point. The navigation of the passage would be much facilitated were a buoy placed upon the edge of the flat.

Upon the north side of Pierowall to Ous Ness the shore is clear, and there is a depth of 12 feet within a cable of it.

The Roadstead of Pierowall, between Westra and Papa Westra, and abreast the harbour of the same name, is a safe anchorage for vessels

* See Admiralty chart of Pierowall road, No. 2,582; scale, $m = 3$ inches.

of any draft of water, for there is never sufficient sea in it to cause a vessel of burden to part her cable, and the ground is of excellent quality. There is no doubt it will become, when better known, the common refuge harbour to vessels detained by adverse winds from proceeding north of the Orkneys, whether from the eastward or westward. It is easy of access, for though the eastern shore of Westra, as already described, is bounded by long reefs, the opposite one of Papa Westra is bold and clean. The approach between Vest Ness and Spo Ness is a mile wide, and the tide-stream in it is never so strong as to prevent a vessel working over it in a moderate breeze.

DIRECTIONS.—With a leading wind, all dangers will be avoided by keeping nearer to Papa Westra than to Westra; give Vest Ness a berth of 3 cables in passing it, and when within the latter, the anchorage has been reached. There is excellent holding ground all the way across; but vessels of considerable draft should anchor nearer to Vest Ness than to Ous Ness, to be clear of the sandbank of $3\frac{1}{2}$ fathoms upon the western side. A quarter of a mile to the northward of Vest Ness is a stony beach, and the best berth for a vessel of burthen is $\frac{1}{2}$ a mile to the westward of it, in 8 fathoms, sand, with Mull head touching the high-water boundary of the west side of Papa Westra, and Noltland castle open of the high-water boundary of Ous Ness.

CAUTION must be observed in taking up the above anchorage not to go too far to the northward of Vest Ness, on account of the sandy bank lying out from Papa Westra.

There is also a good roadstead outside Ous Ness, off the entrance to Pierowall harbour, for vessels which are detained by westerly winds; the depth is 5 fathoms, and the mark, the house of Brakewall, open of the point of Skafha.

To proceed into Pierowall harbour, the house of Brakewall must be kept open of the point of Skafha in order to clear the reef off Brough point. Fore-and-aft vessels may turn in or out by attending to the above mark, and by giving the north shore a berth of a cable. Anchor towards the north side a little without the point of Gill, in $3\frac{1}{2}$ fathoms, clay.

If working towards Pierowall from the southward, the skerry of Skelwick is the first danger to be avoided. It may generally be seen, as it is just awash at high water; but the seaman must not, on that account, make too free with it, for, as it runs off flat, he may be ashore before seeing the rock. There are no good marks for clearing it to the eastward, and therefore it must be given a wide berth. The bearings already mentioned will, however, serve to point out its approximate position. Vessels may haul to the wind round the skerry as soon as the house of Cleat appears open to the northward of the storehouse on Spo Ness; for the remainder

of the distance, give the shore of Papa Westra a berth of $\frac{1}{4}$ of a mile, and in standing towards Westra, keep Noltland castle open to the northward of Brough store; but should this mark not be seen, tack to the northward when midway across the sound. Having weathered Vest Ness, anchorage may be taken up as before directed.

Should a vessel be compelled by circumstances to run through the roost, in the passage between Papa Westra and the holm of Aiker Ness, mid-channel should be adhered to until abreast of Shell holm; then haul two or three points to the westward to clear the skerry of Bakaskal, taking care, however, to have Garth house well open to the eastward of the banks of Cleat, for, upon the same line of bearing, they lead into as little as 6 feet water over the bank extending from Shell holm.

A buoy upon the skerry of Bakaskal would render this channel more available, but it must always be considered an unsafe one, on account of the ebb-tide roost which fronts it.

NORTH RONALDSHA.—The most conspicuous objects upon North Ronaldsha are Holland house and the Free kirk and manse, standing on the highest ridge of the island, which is only 48 feet above the sea. These houses and the new lighthouse appear before Dennis Ness beacon is visible. On a nearer approach, the island is seen to be well cultivated, and plentifully studded with the dark-coloured cottages of the islanders.

DENNIS NESS BEACON and LIGHTHOUSE.—Dennis ness, already partially described, and a view given of it on page 90, is a low rocky point, shelving off for a cable to the eastward. The beacon, a cylindrical tower of masonry, 70 feet high, with a ball on its summit, was originally a lighthouse, it having been erected for that purpose in 1789, and lighted on the 10th of October the same year; but it being found after twelve years' experience, that this light did not prevent numerous wrecks taking place on the islands Sanda and Stronsa, the light on the Start was exhibited; and it not being considered necessary to have two lights so close together, that on Dennis ness was discontinued after the 1st of June 1809. Further experience proved, however, that the removal of the light to the Start had merely had the effect of transferring the scene of wreckage to North Ronaldsha, and another lighthouse has therefore been built on a small eminence at the north part of Dennis ness, about $\frac{1}{4}$ a mile from the beacon, and from it a *bright* light now *flashes* every 10 seconds, at a height of 140 feet above the sea; it may be seen 17 miles off in clear weather. The roofless cottages of its former light-keepers still remain about the beacon, which, together with the new lighthouse, serve, in thick weather, to distinguish Dennis ness from the Start.

Seal, or Selch skerry, is a rocky flat extending more than $\frac{1}{2}$ a mile from the north part of Dennis ness; the north end of it is N. $\frac{3}{4}$ W. rather more

than a mile from the beacon, and E.N.E. nearly $1\frac{1}{2}$ miles from Torri Ness. The highest part of the skerry is awash at high tides, but at low water it is uncovered for 3 cables, and is then separated from the island only by a narrow boat channel. This is a dangerous rock, and should always have a berth of at least $\frac{1}{2}$ a mile, at which distance there is a depth of 20 fathoms.

CAUTION.—The flood-stream runs 6 knots near North Ronaldsha, passing over the Altars of Linnay and Seal skerry with great velocity. Vessels may be set ashore, in a calm, on the Seal, either by flood or ebb, for the flood-stream from the Altars of Linnay runs straight for Seal skerry; and upon the east side, during flood, there is a strong eddy setting directly for the point of the skerry. There is also a bad roost off Seal skerry with southerly winds.

Altars of Linnay, or Linna, upon the north side of Torri Ness, the north-west point of North Ronaldsha, are patches of rock, visible at low-water springs, and fronted on the outer side by a reef, 3 cables broad, while the intermediate coast to Seal skerry is foul and dangerous. The flood-stream setting right over the Altars, it is necessary when a vessel is to the westward of North Ronaldsha in light winds, to keep well to the northward, so as to avoid having to let go an anchor. The Established kirk (the southernmost) in sight above the land, clears these dangers passing to the westward, but as this is more a mark for boats than ships, it will be prudent, with light winds and flood-tide, to keep 2 miles to the northward of North Ronaldsha, for the stream sets towards the Altars of Linnay from several directions, and passes round the points and over the reef with great impetuosity.

Twingas Rock.—The west coast of North Ronaldsha is bold, but off the point of Twingas is a detached reef, upon which there is a depth of only 11 feet at low-water springs; it is fully 3 cables off shore, but it may be cleared $\frac{1}{4}$ of a mile on the outer side by keeping Start lighthouse shut in upon Tafts Ness.

Masewell, a mile to the south-west of Twingas, is a patch of rock with 5 fathoms over it, and 8 and 9 fathoms about it, where, with the ebb-tide and westerly winds, the sea breaks heavily. In smooth water, the Masewell is no obstruction.

South Bay, between Twingas point and Strom Ness, may be used as a temporary anchorage in summer by coasters; the best position is rather towards the east side, in 4 or 5 fathoms, sandy bottom.

Strom Ness may be known by a small round elevation upon it, probably the site of some ancient building. A reef, uncovered at low water, extends a short distance from the point, round which the tide-stream runs rapidly. Vessels may anchor temporarily between Strom Ness and Brides

Ness, in 5 to 8 fathoms, and be partially out of the tide ; it is, in fact, the only place hereabouts where a square-rigged vessel should attempt to anchor, but the ground is indifferent, being patches of sand over rock.

Brides Ness is a low shelving point, with shoal water for a considerable distance seaward ; nor is there a greater depth than 20 feet in the passage between this point and the Reef-dike.

Linclet Bay, between Brides Ness and Dennis Ness, is about $1\frac{3}{4}$ miles wide and a mile deep. The depths in the bay are from 5 to 8 fathoms, but the bottom is rocky, except close in-shore ; coasting vessels, however, may bring up in the north-west part of the bay, in 5 or 6 fathoms, sand. Should a vessel, bound to the westward, encounter a strong north-westerly gale, she may anchor in the bay to avoid being blown out to sea, but due care must be used to keep clear of the Reef-dike, off the south part of the bay.

REEF-DIKE is a rocky shoal, $1\frac{1}{2}$ miles long and $\frac{1}{2}$ a mile wide, lying S.E. 1 mile from Brides Ness. It nearly dries at extraordinary springs. It is divided into patches, with passages from 12 to 18 feet deep between them. Off the south end, there is a depth of 3 fathoms at the distance of 3 cables, and it shoals very suddenly upon the east side, where there are 12 fathoms within a cable. The Reef-dike is connected to Brides Ness by a narrow ridge, or bar, upon which there are 4 fathoms. From the shoalest part of the reef, Dennis Ness is N. by E. $\frac{3}{4}$ E., nearly $2\frac{1}{4}$ miles ; Strom Ness, W.N.W., $1\frac{3}{8}$ miles ; Tafts Ness, W.S.W. $\frac{3}{4}$ S., $2\frac{3}{4}$ miles ; and the Start lighthouse, S.S.W. $\frac{1}{2}$ W., $4\frac{1}{4}$ miles.

To pass a mile to the eastward of the Reef-dike, Dennis Ness beacon must be kept to the westward of N. $\frac{1}{2}$ W., and the Start lighthouse to the westward of S.W. The point of Twingas kept open of Strom Ness, N.W. $\frac{3}{4}$ N. (northerly), will clear the reef passing to the southward, and the manse attached to the Free kirk kept well open to the northward of the water-mill N.W. will clear it on the north side ; or a vessel will be to the northward of the Reef-dike when the flat holms of Eyre off Sanda are on with Strom Ness, West. The houses of Newark just open to the westward of the house of Tafts, S.W. by W. (southerly) (both in Sanda), leads through between the Reef-dike and Brides Ness, in the deepest water.

The ripple of the tide or the break of the sea upon the Reef-dike, often makes its position very conspicuous.

TIDES.—The flood-stream splits upon the west coast of North Ronaldsha, with the Established kirk (the southernmost) in one with a small byre, and should a vessel be drifting down upon the island, she should endeavour to pass to the southward, when she will go clear of everything.

The flood-stream upon the east side of North Ronaldsha sets only 3 hours to the southward, for during the latter half of the tide, there is an eddy setting to the northward, which direction is maintained throughout the ebb; making altogether 9 hours of northerly set. There is no danger to be apprehended during the flood, but the ebb must be carefully guarded against while in the vicinity of the reef. For instance, a vessel in a calm would be drifted by the ebb directly towards the Reef-dike instead of through North Ronaldsha firth. Supposing her to be within $\frac{1}{2}$ a mile of the Start, and the ebb running, she should in that case endeavour to tow the westward into the stream which sets through the firth; at such times the Reef-dike will be readily distinguished, and if it is found that the point of Twingas is being shut in by Strom Ness, the anchor should be let go in about 12 fathoms water.

A vessel in a calm a mile from the Start, would be drifted by the ebb to the eastward of the Reef-dike.

SANDA, NORTH-EAST SIDE.—The Start point is described, and a view given of it, on page 90. A reef, called the Clabrae, extends for 2 cables from the south-east angle of the point, and another, called Langware taing, for an equal distance to the north-eastward. A dangerous roost occurs off the latter for 3 or 4 miles in certain states of the tide and weather, especially with southerly winds and flood tide.

Scathva, or Skuthvy bay, between the Start and Tafts Ness, is foul and rocky, and affords no proper anchorage, but the traders occasionally stop in it for a short time to take in kelp, &c. While working abreast, it will, in general, be prudent to go about when the line of the points has been reached.

TAFTS NESS is low, and should not be approached nearer than 2 cables, for though it is foul but a short distance off upon the north-east side, yet to the northward or within it, the shore is flat and shelving, and so continues to the westward of Creso, a long reef projecting from the shore, the weeds on which are visible at low water for $\frac{1}{4}$ of a mile. The Creso is particularly dangerous, for the flood-stream from the Riv sets, or rather splits upon it. Vessels standing towards the shore in its vicinity, should not go into a less depth than 7 fathoms.

A rocky ledge with 10 to 12 fathoms upon it, stretches to the eastward for a mile from Tafts Ness, and on this the sea breaks heavily in bad weather.

Sandquoy bay is between Creso to the eastward and the Taings of Torsker to the westward; it has a fine sandy beach nearly a mile long, but the shore of the bay is shoal, and in some parts rocky, and it is altogether an unsafe anchorage.

Otterswick, immediately to the westward of Sandquoy bay, is described on pages 110 and 111.

Whitemill point, upon the west side of Otterswick, may be known by a small knoll rising near it, with a sheep-pen on its summit. A reef stretches out from the point to the northward for nearly $\frac{1}{2}$ a mile, and is much in the way of vessels from the westward bound into Otterswick, particularly with off-shore winds.

RIV and BAAS of TREVAN.—To the westward of Whitemill, the shore is shoal and rocky to the point of Riv, an extremely dangerous reef which extends from Bur Ness for nearly a mile to the northward. The Riv itself may be considered to be the highest point of the outer part of the reef, which dries at low-water springs for $\frac{3}{4}$ of a mile, and is separated at that time from the point of Riv by a narrow boat-channel. There is as little as 6 feet water $\frac{1}{2}$ a mile westward of the Riv. On the north extreme of the Riv there is a red beacon 34 feet high.

The Baas of Trevan, the outermost danger of this portion of coast, are $\frac{1}{2}$ a mile to the north-eastward of the Riv, and have as little as 13 feet upon them at low springs; and as the ebb stream sets right over them, they are particularly dangerous to vessels leaving Otterswick in light winds.

Rooswick.—Westward of the Riv the coast is low, and the shores are shelving and rocky in the deep bight between Riv and the holms of Eyre. Rooswick, in the south-west part of the bight, is occasionally visited by lobster smacks and coasters in the summer season, but no square-rigged vessel should venture between the points on account of the general intricacy of the bay, and the velocity of the tide-stream across it.

HOLMS of EYRE and TŪO SPIT.—The holms of Eyre are adjacent to Whal or Whalgio point, to which they are connected by reefs at half-tide: the holms are flat, and not more than 10 feet above high-water springs; they are flanked east and west by reefs, and northward the rocks dry out nearly $\frac{1}{4}$ of a mile to the Lother, and in the same direction $\frac{1}{2}$ a mile from the outer holm, is a rocky bank or spit named the Tuo, with 10 to 12 feet over it.

RUNABRAKE is a rocky patch lying nearly midway between North Ronaldsha and Papa Westra, with 20 feet of water upon it at low-water springs, and 15 to 25 fathoms close about it. It is out of the way of vessels bound from the Mull of Papa to the northward of North Ronaldsha, but it is directly in the track of those running for North Ronaldsha firth. In bad weather, the breaking sea upon it may be seen from a distance of 4 or 5 miles, and at other times the rippling of the tide-stream over it is very distinct.

That portion of the Runabrake which has less than 5 fathoms upon it is $\frac{1}{4}$ of a mile long N.E. and S.W., and about 2 cables broad; the sea, however, will break over the space of a mile or more in bad weather. Upon the west side there are 20 fathoms within a cable of the shoal, but to the eastward the depths increase gradually.

For the least water, one thwart mark is the Noup head of Westra, showing like a quoy or sheep-pen above the intervening land, a little open to the southward of the windmill on Papa Westra W.N.W. $\frac{1}{2}$ W., or Holland house, in Papa Westra, appearing over the south fall of the cliff of the holm of Papa; while the house of How, in Sanda, touching the west brae of Whal point, leads a little to the west of the shoalest water. From over the summit of the bank, the Start lighthouse is S.E. $\frac{3}{4}$ S. $9\frac{1}{2}$ miles; Dennis Ness lighthouse, E. by S. 8 miles; Torri Ness, E. $\frac{3}{4}$ S. (southerly), $6\frac{1}{2}$ miles; Strom Ness, E.S.E. $\frac{1}{2}$ S., $6\frac{3}{4}$ miles; Tafts Ness, S.E. $\frac{1}{4}$ S., $7\frac{1}{4}$ miles; north holm of Eyre, S. by W. $\frac{1}{4}$ W., $3\frac{1}{4}$ miles; Red head, S.W. $\frac{1}{2}$ W., $7\frac{3}{4}$ miles; Moclet point, W. $\frac{3}{4}$ N., 8 miles; and Mull head, Papa Westra, N.W. by W., $7\frac{3}{4}$ miles. Start lighthouse open east of Tafts, clears it passing to the eastward, and Free kirk on Sanda open to the westward of Whal point leads to the westward.

DIRECTIONS.—Throughout North Ronaldsha firth, the sea during and after westerly gales, will at times break in 8, and even in 12 fathoms water.

As the body of the firth has a rocky bottom, and the water is not deep, it will be better in calm weather to let go the anchor while there is plenty of room, and not to wait until the vessel is close down upon the land.

Running.—It is, generally, more prudent for vessels bound past the Orkneys, to go to the northward of North Ronaldsha so as to have the advantage of an open sea, but there are cases in which it is desirable to pass through North Ronaldsha firth; as, for instance, when the wind from the eastward is so strong as to prevent sufficient sail being carried to weather North Ronaldsha. A vessel off the Start, with a fair wind and daylight, will have no difficulty in sailing through the firth; it is only necessary to keep $\frac{1}{2}$ a mile outside the Start and Tafts Ness, and then to steer a course so as to pass the same distance to the westward of Twingas; but before arriving off the latter, the Start lighthouse should be brought over the low land of Tafts Ness upon a bearing eastward of South. From Twingas a N.W. $\frac{1}{2}$ W. course, made good for 5 miles, will lead a mile to the northward of the Runabrake, or the Start lighthouse kept open of the farm-house of Tafts, will clear it passing to the eastward, from whence the Mull head of Papa will be W.N.W. $\frac{1}{2}$ N., 8 miles.

Working.—If the wind be from the northward, a vessel may work against the tide, in moderate weather, as far as the Start, when she must wait till the stream turns. As long reefs extend from that point, it must not be made too free with. Upon its north side there is also foul ground, and no vessel should stand into Scathva bay.

When standing to the north-eastward towards the Reef-dike, tack before Twingas point becomes shut in by Strom Ness; and if the wind is light, keep well upon the Sanda side to avoid the set of the ebb-stream over the Reef-dike.

The shore of North Ronaldsha should have a berth of at least 2 cables, and allowance must always be made for the vessel missing stays; and as there is generally a roost off Twingas point, especially during and after a westerly wind,—sometimes even in a calm,—it will be well to avoid it as much as possible.

From Tafts Ness to Creso, go no nearer to the shore than $\frac{1}{2}$ a mile, and when standing towards Sanda abreast Otterswick, and as far as the Baas of Trevan, the Start lighthouse must be kept open to the eastward of the cottages of Tafts S.S.E. $\frac{1}{4}$ E., so as not to lose the strength of the tide. The cottages referred to are those nearest to the ness; there will, therefore, be no danger of mistaking them.

The mark just given will also lead clear of the Baas of Trevan and the Runabrake. For the latter danger, however, this is a long mark; a better one for clearing it passing to the northward is Noup head, Westra, open to the northward of the windmill on Papa Westra, or Holland house open to the northward of the pile on the holm of Papa.

The stream sets rapidly over the Baas of Trevan, but that from the body of the firth goes towards and to the northward of the Runabrake. Should, however, the ebb-stream be nearly spent, greater advantage will be gained by working to the southward of the Runabrake, as the flood-stream is weak within the line of the holms of Eyre and Papa Westra. The Baas of Trevan and the neighbouring dangers will be cleared to the north-west, by keeping the Red head of Eda well open of the holms of Eyre; and when standing to the northward, tack well short of the Runabrake. Respecting this danger it is to be remarked, that if the water is too smooth to cause a break, none but vessels of great draft would strike upon it.

It is necessary to keep a mile from the outermost of the holms of Eyre, so as to pass well clear of Tuo spit.

Between Sanda and Westra the tide-stream is weak, and the water is at all times comparatively smooth, or at any rate the sea is regular, and under ordinary circumstances, a vessel will be able to beat up to Papa Westra against the flood, and should the wind freshen, a safe anchorage will be found at Pierowall.

the Baas of Trevan, a course should be shaped for about the middle of Sandquoy bay, and upon Whal point being shut in by Bur Ness, the vessel's position must be tested by the bearing of an object, to ensure her passing well clear of the reef extending from Whitemill point, which having passed, and the harbour appearing open, a more southerly course may then be steered, taking care to have Bur Ness well open of Whitemill point to clear the Back holm. When the leading mark has been brought on, proceed as before directed.

For working in, no better direction can be given than to tack with Savil Green house at either end of Colziegarth, taking care not to open them, as the narrowness of the channel admits of no licence. Being within the southernmost of the Taings of Torsker, upon which the sea is generally breaking, the south-east side of Otterswick may be closed to within 2 cables, for along it is the deepest water ; but the north-west portion is very shallow, and it is advisable to go about in mid-channel when standing towards it. The head of Otterswick is also very shoal and unfit for anchorage.

It sometimes happens that an accident, such as springing a leak, the loss of anchors, or even the extreme violence of the wind, will render it necessary to beach the vessel, and for this purpose the head of Otterswick offers great convenience, for the vessel has merely to haul close round the skerry of Lamma Ness, and may then be beached on a clean sand, without being exposed to the range of the sea.

In turning out of Otterswick, it is necessary to guard against the ebb tide, which sets over the Riv and the Baas of Trevan, and, in light winds especially, the vessel must stand well towards Creso, before working to the north-west into the body of the firth.

It is high water, full and change, at Otterswick at 9h. 12m. ; spring tides rise 11 feet, neaps 8 feet.

CHAPTER VII.

ORKNEYS.—SANDA SOUND.

VARIATION IN 1876.

Tres Ness - - - 22° 30' W.

Sanda sound has a melancholy notoriety, from the numerous wrecks which have occurred upon its shores. The following description of the south side of Sanda, and the east side of Stronsa, is more in detail than that given in the fifth chapter, under the head of "Sea Margin and Approaches."*

SANDA, SOUTH SIDE.—The extremity of Sanda is the Start point, from the south-east part of which, extends the Clabrae reef for a distance of 2 cables. The south side of the islet is bold, but towards Lop Ness, a mile to the westward of the Start, reefs dry out for some distance; at Guataing for 2 cables. The Start point and neighbouring shore should have a berth of $\frac{1}{2}$ a mile.

TRESNESS BAY, the largest bay in Orkney, has a continuous sandy strand for 5 miles.

From Guataing, the coast bends to the northward, and forms the bay of Lop Ness, in which vessels load during the summer season, but it is an indifferent anchorage. A large house and offices stand upon the shore, abreast which, in a line between Guataing and Rus Ness, is a skerry named the Reef of Birbos, upon which there are but 5 feet.

Westward of Lop Ness, the shore of Tresness bay continues flat and sandy to Rus Ness and Newark, up to which, vessels should keep the Start lighthouse open of Lop Ness or Guataing while standing in shore. Rus Ness is but little in advance of the general line of coast upon either side, but it may be known by a house with a tall chimney, and by a wind-mill standing close beside it.

A short distance farther on are the large farm-houses of Newark, a little to the eastward of which, off the Taing of the Old houses, and $\frac{3}{4}$ of a mile from the shore, is the best anchorage in Tresness bay. With off-shore winds in summer, a vessel may lie here for a few days, but the ground cannot be depended upon, as its general character is rocky, with occasional patches of sand, for which reason, if it be necessary in making a passage to

* See Admiralty chart of the Orkney islands, No. 2,180; scale, $m = 0.5$ inches.
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the Baas of Trevan, a course should be shaped for about the Sandquoy bay, and upon Whal point being shut in by P vessel's position must be tested by the bearing of an object passing well clear of the reef extending from White having passed, and the harbour appearing open, a vessel may then be steered, taking care to have Bar Ness point to clear the Back holm. When the leading on, proceed as before directed.

For working in, no better direction can be given than to the Savil Green house at either end of Colzie; but, as the narrowness of the channel at the southernmost of the Taings of Torris, breaking, the south-east side of Otter, for along it is the deepest water shallow, and it is advisable to go towards it. The head of Otter anchorage.

It sometimes happens that a vessel, in the loss of anchors, or even in the necessity of beaching the vessel, the divisional mark between the offers great convenience. The named Catasand, entirely dry at low skerry of Lamma Ness, to this flat is upon the north-west side of being exposed to the Clog, and has always sufficient water in it to In turning or anchoring afloat in safety.

tidal, which are lying between Tres Ness and Ells Ness, named Staewick, is unfit especially, the bottom is rocky.

the north- It is another peninsula projecting boldly forward, is a mile in tides, and 3 cables in breadth; upon its east side are several tumuli,

and are very conspicuous, and a farm-house is at the north end. Ells Ness, situated to Sanda by the Stae banks, a narrow strip of dry sand.

Three cables off the south point of the ness are some very numerous rocks, the Lithys, the summit of the Tosky reef, which extends another cable outside them. Before rounding the ness, the large farm-house of Bacaskal must have been opened to the southward of the head of Ells Ness, a small rocky islet in the mouth of the bay of Kettletaft, upon which a ruined house shows plainly.

Kettletaft is a very shoal harbour, fit only for coasting vessels. The inner half of the bay dries, and in the outer portion, between Bea Ness and the store of Ells Ness, is a rock named the Cow, which sometimes appears above water, while between the Cow and the holm is the skerry of the Rede, i.e. skerry of the roadstead, showing at low-water springs. The holm of Ells Ness is surrounded by long reefs.

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 es, upon the north-west side of the bay, dries off flat for a detached skerry, named Kierlies reef, with only 6 feet over the shore, lies off Bea Ness; but although thus beset the anchorage is considered valuable, as it is the only vessels upon the south side of Sanda. The white prominent upon the high part of Bea Ness, and there upon the same side of the bay. To the north of ges on the banks, and a little farther up the as kept open to the east of the storehouse, of, and Tres Ness kept open of Ells Ness,

is with the house of Bacaskeal, mark of Bea Ness, in 3 fathoms, ride safely in all winds; but winter season, for a heavy beam, winds, and the island of Stronsa is too sary protection in those from south-west.

ay has upon its shore the kirk of Cross parish, and the house of Bacaskeal already alluded to. The bay proves but an indifferent roadstead, for the ground, although generally sandy, cannot be trusted to, and a heavy sea is thrown home in southerly and easterly winds; it is besides, so shoal, that vessels have to anchor in a position where they receive but little protection from Ells Ness, while there is but a limited space for working out.

From Bacaskeal to the westward, there are no particular obstructions as far as Quoy Ness, a low point with a sheep pen on it. This part of the coast is well marked by the farm-house of Wasetter, and by a windmill, standing on the outline of the high land.

Dennis Skerry, between Quoy Ness and Hack Ness, is a shoal with only 2 feet upon it, lying out $\frac{1}{3}$ of a mile from the shore. Its outer edge has the house of Greentaft in Eda on with the south end of Spur Ness; therefore, to pass outside the skerry, the pile on the Ward of Eda should be kept open of Spur Ness.

Hack Ness has the stump of a windmill and a cow-pen standing on it.

SPUR NESS is the south-west point of Sanda and the north boundary of a passage named the Kell. Between Hack Ness and Spur Ness, is the little bay of Stove, where small vessels may find a good summer anchorage. The entrance is only $2\frac{1}{2}$ cables wide, and though nearly a mile deep, the bay dries for half its extent, and it is necessary to bring up on the line between the points, with the house of Greentaft just shut in by Spur Ness; here, a vessel will be out of the influence of the tide stream, in

4½ fathoms water. The strong set across the mouth of the bay is its chief protection; and as the holding ground is good, a vessel may ride here safely during summer.

The Kell, the passage between Spur Ness and the holms of Spur Ness, has only 16 feet in it at low water, and the bottom is rocky and uneven. An exceedingly rapid tide-stream sets through the Kell, always causing a roost upon the side opposite to that from which the stream is coming, and hence its name.

Spurness Holms and Sound.—The three small green islets, the Holms of Spur Ness (the middle one having a small house on it), form at low water, a connected mass $\frac{1}{2}$ a mile in length. A northern projection from the holms, with only 5 feet upon it, considerably narrows the passage of the Kell. Spurness sound, between the holms and the islet Little Linga, is $\frac{1}{2}$ a mile wide, and about 9 fathoms in average depth. Off the north point of Little Linga the water is shallow for some distance, but the holms may be approached to 2 cables at high water, and to half that distance at low water.

TIDE.—In Spurness sound, the tide begins to the eastward half an hour before it is low water on the shore, or 1½ hours before it is low water in the stream, and turns every six hours. This stream is like a mill-race in the narrows when passing Spur Ness, but it speedily becomes diffused in Sanda sound, and off Kettleaft it scarcely runs 2 knots.

STRONSA, EAST SIDE.—Little Linga is a small flat green islet off the north-west point of Stronsa, with an uninhabited white house standing on it. It is separated from Link Ness by a narrow sound with 3½ fathoms in it.

LINK NESS, the north-west point of Stronsa, is low, and partly cultivated. Upon the north side it is shallow, and here there is a small rock named the Sutter, lying out $\frac{3}{4}$ of a cable from high-water mark.

The Holm of Huip appears as a single rounded hill 60 feet high, having on its summit a cairn of stones; a spit and some small rocks extend from its south end, and generally its shores are not bold, and should have a berth of 1½ cables, particularly its north-east end.

Between Link Ness and the holm of Huip there is a sand-bank with 10 feet upon it; but outside the line of the ness and the north point of the holm, there are 3 fathoms, and between the highest part of the holm and Little Linga, there are 4 fathoms. Here there is excellent holding ground and safe anchorage with all winds, though at times a considerable swell rolls round the holm of Huip.

There is a narrow channel with 10 feet in it between the holm of Huip and Stronsa; this passage is unfit for general navigation, but if necessitated to use it, keep one-third the breadth of the channel from Stronsa.

The point of Cumlie is very flat, with a small skerry lying close to the shore upon the east side. The bottom of Sanda sound abreast this point is rocky and uneven, with several unnamed patches of less than 5 fathoms, over which the sea breaks heavily in southerly gales. The general depth of water is 8 and 9 fathoms, but not more than 5 fathoms can safely be depended upon. If the pile on the Ward of Eda be kept to the northward of the house on Spurness holm, a vessel will pass to the northward of all the shoals; or the windmill on Eda between the middle and the northernmost of Spurness holms, will lead between the northernmost shoal and the others.

Upon most of the foregoing patches there is a depth of 4 fathoms, but over one of them there is as little as 15 feet; this latter has the windmill of Eda in line with the house on Spurness holm, and the barrow at the Ward of Clestron, in line with the farm-house of Whitehall (both in Stronsa). The mark to go to the northward of it has already been given, and to pass between it and Quiabow, the kirk of Eda, situated upon the shore, must be kept on with the north point of the holm of Huip.

Quiabow, or Quoybow, is a more dangerous reef, with only 5 feet upon it, about $\frac{1}{2}$ a mile to the eastward of Cumlie; the rock itself is very small, but it is surrounded by a bank $\frac{1}{2}$ a cable across, with 2 and 3 fathoms over it, and the channel between it and the shore has 17 feet in it at all times. Greentaft house in Eda open of Cumlie, will clear the Quiabow on its north side, and the south barrow upon the Ward of Clestron in line with, or open east of the manse in Stronsa, will lead to the westward of it. This rock is much in the way of vessels bound into or out of Papa sound.

PAPA STRONSA is a small well-cultivated islet near the north-east extremity of Stronsa; it has a barrow with a stone pile on it at the north end, a windmill towards the south, and a cluster of large white houses upon the west side. Upon the Stronsa shore abreast, is a row of houses nearly $\frac{3}{4}$ of a mile long, to the westward of which, and rather up the hill, is Whitehall, a large white house, and a little to the southward is the manse. On the ridge of the hill, $\frac{1}{2}$ a mile to the southward of the manse, are two small barrows on the Ward of Clestron, which are used as sea-marks.

The west extreme of Papa Stronsa, is at high water, a long stony point, but at low water it appears based on an extensive dry sand, which tails off shoal to the westward; the north and east sides of the islet are shoal and flat, and at the north-east end there is as little as 2 fathoms $\frac{1}{4}$ of a mile from the shore. Farther out in the same direction is Papa Groina, a shoal with 18 feet upon it at low water, which is cleared on its east side by keeping Burgh head open of Odin Ness. There is another patch with 5 fathoms upon it, a mile to the north-east of Papa Stronsa. These, and other similar features, cause in stormy weather, as heavy a sea in Sanda sound as in any part of the Orkneys.

PAPA SOUND, formed under cover of Papa Stronsa, has of late years become of great importance as the seat of the principal herring fishery in the Orkneys, and during the season more than 1,000 boats at times put to sea together, while there will also be a large number of vessels waiting for cargoes. Papa sound, however, can never become generally useful, for it is both shallow and extremely difficult of access.

The north entrance to the sound has 13 to 15 feet in it at all times, but it is not more than $1\frac{1}{2}$ cables wide, being considerably contracted by a reef extending from the western shore, a large portion of which is uncovered at half ebb. To enter the sound by this channel in the deepest water, keep the north barrow on the Ward of Clestron over the manse, and the reef will be abreast, when a dark-looking hut upon the shore at the reef appears end on. In the sound is a spot called Jacks hole, in which there is a depth of 5 fathoms, but not more than 3 fathoms can be reckoned upon, and the ruling depths over the sound are 6 to 10 feet; the trading vessels, however, by taking advantage of high water, sail to the east end, where there is a gully with 12 feet. Here, as the water is always still, and the bottom soft, it matters little if a vessel takes the ground.

The south entry into the sound is nearly blocked up by skerries, between which, there are depths of 4 and 5 feet at low water. As this channel is extremely narrow and critical, and only available with a fair wind and smooth water, it should never be attempted by a stranger.

Grice Ness, separating Papa sound from Odin bay, is very flat, and a rock, dry at low-water springs, lies $\frac{1}{4}$ of a mile to the south-east of it.

ODIN BAY, or Mill bay, though a mile wide and more than a mile deep, is far from being a good anchorage, for though the depth is from 5 to 7 fathoms, and the bottom in some places sandy, it is in general foul. In the summer season, trading vessels which are prevented getting into Papa sound, usually anchor in 7 fathoms, $\frac{1}{4}$ of a mile from the south side of Grice Ness. The shores of the bay are flat, and besides Griceness skerry, the only other outlying danger is the Bow off Odin Ness, which dries at low-water springs, and has a shoal bank of some extent surrounding it. In the channel between the Bow and Odin Ness, there are 4 fathoms. The house of Kurbuster kept outside Odin Ness, clears the rock passing to the eastward.

The reefs extending for some distance from Odin Ness, are the last of the dangers upon the east side of Stronsa.

From Odin Ness to Burgh head the coast is high and broken, and at Burgh head the cliffs are perpendicular and 114 feet high, the land behind rising slightly to the Ordnance station, which is marked by a pile. (See view, page 91.)

To the southward of Burgh head, the cliffs are broken and low to Hells mouth, a bight upon the north side of Lamb head, abounding with rocks and chasms. The astounding noise of the sea which breaks in front, has given rise to its singular name.

LAMB HEAD is a small peninsula, 77 feet high, sloping from west to east, and its almost isolated character renders it sufficiently remarkable.

DIRECTIONS for SANDA SOUND. The course and distance from the Start to Lamb head are S.W., 13 miles; from the Start to Tres Ness W. by S. $\frac{1}{4}$ S., $5\frac{1}{2}$ miles; and from Tres Ness to Burgh head S.S.W. $\frac{1}{4}$ W., 8 miles.

Though Sanda sound is not generally available for vessels of heavy draft, still shelter may be found in it in easterly gales, or when a vessel has accidentally become embayed between the Start and Burgh head; under such circumstances, when either of these well-marked points are clearly recognised, there will be little difficulty in finding an anchorage.

In working from the southward towards Sanda sound, it is to be remembered that the tide-stream turns sooner in-shore than in the offing, and though there is a clean shore from Lamb head to Odin Ness, the north-east side of Papa Stronsa is foul, and it is necessary to go about when within a mile of the shore. There is very little tide-stream west of the line of Tres Ness and Odin Ness, and even between Burgh head and the Start a vessel will work against it in a moderate breeze and smooth water. Upon the Sanda side, by keeping outside the line between the Start and Tres Ness, the Brae Grena will be avoided. As a general rule, it is better to keep under way than to anchor and wait for tide in Tres Ness bay; but in case of a calm, the kedge or bower may be dropped anywhere upon the eastern half of the bay, outside the line from Lop Ness to Tres Ness; a more prudent plan, however, would be to drop the kedge in 20 or 25 fathoms outside the line of the points. As the water throughout the sound is not deep, it may, under some circumstances, be used as a roadstead, as for instance, in a westerly or off-shore gale.

The common cause of loss in Sanda sound is from vessels becoming embayed in southerly gales in Tresness bay. The best plan to pursue in such an emergency, is at once to let go both anchors and veer out to the clinch, and then to adopt every seaman-like precaution even to the cutting away the masts, should such an expedient be considered necessary. But when a vessel's cables are too defective for the severe test to which they would be exposed, then a favourable part of the sandy strand should be selected, and the vessel run ashore upon it. The border of Tresness bay, as already remarked, is composed of sand, and as a consequence, the loss of life bears no proportion whatever to the number of wrecks that have taken place upon it.

In bad weather, however, it is not always so dark or thick but the land may be seen several miles off, and the various points be recognised without difficulty from the description already given of them. If Burgh head can be identified, then it will only be necessary to skirt the east and north sides of Stronsa at the distance of a mile to find an anchorage, or if the Start be first seen, then W. by S. $\frac{1}{4}$ S. for 5 miles will lead to Tres Ness, and from thence W. by S. for $5\frac{1}{2}$ miles leads to the holm of Huip; the directions for anchorage off which are given on page 116, or the course may be continued between the holm of Spur Ness and Little Linga, and a berth taken up under the lee of Great Linga.

Papa sound is too intricate to be attempted in bad weather, but a vessel having lost her anchors, may beach with tolerable safety either in Kettle-taft or the bay of Stove. If the marks already given for Kettletaft cannot be recognised, it will be necessary after the holm of Ells Ness has been rounded, to keep nearer to Bea Ness than mid-channel until half way up, and then steer for the gully at the north-eastern angle of the bay leading into the sands of Ells Ness, in which there are 10 feet at high water; here the vessel may be laid ashore.

CHAPTER VIII.

ORKNEYS.—WESTRA AND STRONSA FIRTHS, AND EDA SOUND.

VARIATION IN 1876.

Brough of Birssa	-	23° 0' W.		Eda	-	-	-	22° 40' W.
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Westra and Stronsa firths, which we assume to be divided by Great and Little Green holms, form together one of the largest and widest sounds in the Orkneys, and a great thoroughfare across the group; they have also the advantage of good harbours, or temporary anchorages, upon their sides.*

WESTRA FIRTH is formed by the islands of Westra, Fara, and Eda, to the north-eastward, and Rowsa and Egilsha to the south-westward; it is about 10 miles long, and $2\frac{1}{2}$ miles in average width; the mean depth in it may be considered as 20 fathoms, but it is more encumbered by shoals and skerries than Stronsa firth.

WESTRA, SOUTH-WEST SIDE.—The appearance of the Noup of Westra has been described on page 98. High perpendicular cliffs continue from it, their elevation gradually decreasing to the flag of Inga Ness, or Ingaval, the south-west extremity of the island, and where Westra firth may be said to begin. From Inga Ness the coast turns southerly to the low shelving point of Skea, the extremity of which is nearly separated from the adjoining land by a ravine, and appears as an island when seen from the westward or eastward. A high-water table rock, named the Hless, is attached to Skea point, and extends for about a cable.

SKERRIES of SKEA, the most important of the outlying dangers in Westra firth are a mile to the southward of Skea point; they consist of a cluster of rocks upon a bank $\frac{1}{2}$ a mile long north and south, and at half-tide, they appear as two distinct skerries. The southern one, which is only covered at high water, should be distinguished by a beacon to assist the navigator through the firth, the northern skerry is covered at half-tide, and both are bordered by a very shoal extension to the eastward.

Besides a rock with 3 feet upon it, lying between the skerries and Skea point, there is also a detached bank of sand and rock, with 12 feet over it, lying $\frac{1}{2}$ a mile to the westward of the skerries; the intervening channel having 7 to 10 fathoms in it. The sea breaks heavily upon this bank whenever there is any swell. There are 12 fathoms $\frac{1}{2}$ a mile to the

* See Admiralty charts :—Orkney islands, No. 2,180; scale, $m=0.5$ inches; and Scotland, east coast, sheet V., No. 2,181; scale, $d=15\frac{1}{2}$ inches.

westward and eastward of the skerries, and 6 and 7 fathoms between them and Skea point.

The tide stream sets right over these rocks when they are covered, and they are specially dangerous to vessels drifting in a calm with the ebb out of Westra firth, that have neglected to tow to the southward.

Any part of the Noup of Westra kept open of Inga Ness will clear the skerries of Skea passing to the westward, but to avoid the detached bank of 12 feet, it is necessary to keep open Quoyval, the first hill to the eastward of the Noup, and represented in the accompanying view. The Red head of Eda kept well open to the southward of the cottages of Rusland, leads to the southward of the skerries of Skea.



Noup of Westra, E. by N. $\frac{3}{4}$ N., 4 miles.

Tuquoy Bay occupies a great portion of the south-west side of Westra ; but, as it is generally foul, it should be avoided.

To the eastward of the point of Skea there are but 16 feet at $\frac{3}{4}$ of a mile ; the point of Tuquoy is also very flat, with 14 feet only at $\frac{1}{2}$ a mile to the eastward of it ; within this sandy spit there are 3 and 4 fathoms at all times, and here small vessels occasionally take in or discharge cargo. The sandy bay farther in dries for the most part at low water.

The east side of Tuquoy bay is also very foul and flat ; the skerry of Wasbuster, a flat rocky mass never entirely covered, dries at low water for nearly $\frac{1}{2}$ a mile, and the sea-weed may be seen about it for a much greater distance. Between the north-east end of the skerry and the shore there are only 6 feet at low water ; there is also a patch barely covered at the same time of tide some distance to the eastward of the south point.

The point of Twingas within to the skerry of Wasbuster is shoal for $\frac{1}{2}$ a mile to the southward, at which distance from the point, and lying $2\frac{1}{2}$ cables from the west shore of Rap Ness, is Swine skerry, a rock nearly dry at low-water springs.

RAP NESS and WART HOLM.—Rap Ness, the south extremity of Westra, is very foul upon the west side, and the south and east sides, though free of outlying dangers, are very flat. The first rock to the southward of Swine skerry, from which it is $\frac{1}{2}$ a mile distant, is Broad Shoal ; a part of it shows at low water, and there is no available passage within it. The next rock is the Clump, a black stack 15 feet above high water, and easily recognised ; it has a few rocks to the south-westward, with narrow channels between. Lastly occurs Wart holm, a small green islet, W. $\frac{3}{4}$ N.

$\frac{3}{4}$ of a mile from the extremity of Rap Ness, round which the water is shallow for $1\frac{1}{2}$ cables on every side.

RAPNESS BAY.—There is tolerable anchorage in Rapness bay, and although it is open to southerly winds, and a westerly swell rolls in, yet the holding ground is good, and a vessel properly found might ride in it through the winter. This bay is also a convenient stopping place for vessels detained in their passage through the firth, either by a want of wind or of daylight, and for those bound to the northward. The depth in it is from 3 to 5 fathoms.

Fara Holm forms the east side of Rapness bay, and has lying out, N.W. $\frac{3}{4}$ W. $\frac{1}{2}$ a mile from its south end, a bank of sand with 11 feet upon it at low-water springs; there are 5 fathoms between it and the holm, and it lies nearer to the holm than to Rap Ness; the marks for clearing it are given below.

DIRECTIONS.—In entering Rapness bay from the westward, give Wart holm and Rap Ness a good berth, and anchor with the Red head of Eda midway between Weather Ness and Fara holm. The bank with 11 feet upon it N.W. $\frac{3}{4}$ W. $\frac{1}{2}$ a mile from the south end of Fara holm, is cleared passing to the westward by keeping nearer to the ness than the holm. Saverskaill head, in Rowsa, on with Rap Ness clears it passing to the northward, and Wart holm seen open of Rap Ness clears it passing to the southward.

Approaching the bay from the southward, pass to the westward of Rusk holm, the northern reefs from which will have been cleared when Skea point is shut in by Rap Ness.

To avoid the sea, the small native vessels often pass to the eastward of Rusk holm, but the channel, though deep, cannot be recommended.

The narrow passage between Weather Ness in Westra and Fara holm is named Weatherness sound; there are 5 fathoms in the deepest part, but the navigable channel is only a cable wide, and the tide-stream runs strong through it. The deep water is close to the holm, and Weather Ness must be avoided, for though it is clear to the low-water ledges extending from it, yet a reef upon the west side encroaches considerably upon the channel.

RUSK HOLM is a small flat islet with a deserted house upon it, S. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles from Rap Ness; it is $\frac{1}{4}$ of a mile long at high water, but more than double that extent at low water in a N.N.E. and S.S.W. direction; the crest of the southern portion of the reef is not covered at high-water neaps.

Rusk holm is at times a serious impediment, for the flood-stream sets over the southern part of it; its west side should have a berth of 2 to 3 cables, and the north end should not be approached nearer than $\frac{1}{2}$ a mile

on account of outlying reefs in that direction. There is also a skerry, nearly dry at low water, $2\frac{1}{2}$ cables to the north-eastward of the holm bounding the channel between Rusk holm and Fara, a passage $\frac{1}{2}$ a mile wide, with 7 and 8 fathoms in it, but it is at all times preferable to pass to the westward of the holm.

FARA* and Fara holm (a continuation of it) form one island at low water, but at half-tide boats can pass through Levy sound, the passage between them. The west and east sides of Fara are clear at the distance of a cable, but the south-west part of the south end is foul. The Harp, nearly dry at low-water springs, and surrounded by a sand-bank, marked by the lighter colour of the water, here lies out 3 cables from the shore, forming, with the south point of Fara, the northern boundary of the south channel into Fara sound. The Harp is cleared passing to the westward by keeping Green holm open of Eda, but as this is not a good mark for avoiding it, when working through the channel, a vessel must then tack when half way across from Fara Ness.

EDA, WEST and SOUTH-WEST SIDES.—From Red head, the north point of Eda, the coast trends south-westerly to the Little Noup, a lower bluff. It then extends 3 miles to the southward, when, curving to the westward and north-westward, it forms the large bay of Fara Ness.†

Red Holm, lying nearly midway between Little Noup head and Fara holm, and in the middle of the north entrance to Fara sound, to which it affords protection, is a small flat islet about 10 to 15 feet above high water; it is shoal for a cable upon its west side, and a ledge extends from its south end for $2\frac{1}{2}$ cables. This extension encroaches upon the channel between the holm and Eda, besides which, the shore of the latter abreast is shoal and flat, but the depth in the passage is about 5 fathoms, and a vessel may safely use it with a leading wind, by keeping near mid-channel.

FARA SOUND, contained between Eda and Fara, is at least $\frac{3}{4}$ of a mile wide, with depths in it varying from 7 to 12 fathoms. The west side of the sound along the shore of Fara is bold and clear, but the eastern or Eda shore must have a good berth, particularly in the vicinity of Red holm.

There is a sand-bank with 13 feet upon it in the southern portion of the sound, abreast the south end of Fara. Few vessels navigating among the Orkneys draw so much water as to constitute it an obstruction; but in case of Faraness bay being at any time made a rendezvous for heavy vessels, it would be necessary to mark it with a buoy. It is a mere knoll, easily distinguished by the light colour of the water over it; the general track is nearer to Fara than Eda, and a vessel will be to the northward of

* Fær-ø or Fara, i.e., Sheep's island.

† Færness, the ness of sheep, but commonly written and pronounced Fersness.

the bank so long as the bright sandy strand of Egilsha is shut in by the south point of Fara.

FARA NESS and BAY.—Fara Ness, that point of Eda opposite the south point of Fara, is bold to within $\frac{1}{2}$ a cable of the shore.

Faraness bay, immediately to the eastward of Fara Ness, and forming the head of Fara sound, is rather uneven in depth, as it varies from 3 to 6 fathoms throughout, the least depth being in the middle of the bay, but to the southward there are 6 fathoms. The safest and best anchorage in the bay is upon the west side just within Fara Ness, and having the ness on with the tail of Rusk holm. In this position there are 6 fathoms, and a well-found vessel may ride in it in all weathers.

Bound to Faraness bay, pass fully $\frac{1}{2}$ a mile to the southward of Rusk holm, to avoid the long reef projecting from it, which will generally be seen; then steer for Fara Ness, which is bold: if working in, it will be necessary, as before observed, to tack, when half-way across the channel from Fara Ness, to avoid the Harp; and when the ness has been passed, steer in to the southward to the anchorage.

TIDES.—The tides in Weatherness and Faraness sounds are peculiar; the stream turns to the eastward as soon as the tide has ceased to fall upon the shore; that is, the flood stream makes $2\frac{1}{2}$ hours before it does in Westra firth. The stream pours through the narrows of Weatherness and Faraness sounds at the rate of 4 knots, and then sets very weakly towards Calf sound.

From Fara Ness the coast of Eda extends to the S.S.W. for $1\frac{1}{2}$ miles, and is named Gruthay; it is free of danger.

Seal Skerry, $1\frac{1}{4}$ miles from Fara Ness, is a rock covered only at high water, and at low water dries for $2\frac{1}{2}$ cables. The reef defends a small bay within it from westerly winds, where small vessels occasionally take in cargoes of peat. It is, however, unfit for general use.

From Seal skerry southward the coast of Eda is clear to War Ness, one of the divisional marks between Westra and Stronsa firths.

ROWSA, NORTH-EAST SIDE.—The north-west side of Rowsa is bold and clear of danger, and at Sacquoy head the shore trends south-easterly into Westra firth. Upon the north-east side of the head flat reefs dry off for a short distance, but an offing of $2\frac{1}{2}$ cables is sufficient to clear them.

The bold headland of Saverskaill is $\frac{3}{4}$ of a mile to the eastward of Sacquoy head, and from thence the land falls back into the bay of Saverskaill, or Wasbuster, which affords no anchorage, as the bottom is rocky and the depths considerably close to the shore. The high hill Kierfea, elevated 762 feet, declines steeply to the shore of the south part of the bay.

The east boundary of Saverskaill bay is formed by Faraclet head, the north-eastern projection of which is named the Knee of Rowsa. The shore of this promontory is free of danger, and continues so to Skok Ness, at the northern entrance to Howan sound.

EGILSHA lies to the eastward of Rowsa, being separated from it by Howan sound. The north and east sides of Egilsha, though rather flat, are free of danger. The small islet, Kili holm, is joined to the north side of Egilsha at low water.

There is a knoll of $4\frac{1}{2}$ fathoms lying out $\frac{3}{4}$ of a mile from the southern part of Egilsha, in a direction towards Green holm; and there is another patch of 5 fathoms, named the Benlin, W. $\frac{1}{4}$ S. $1\frac{1}{2}$ miles from Little Green holm. Both these shoals are generally well marked by the rippling of the tide over them.

The Grand of Egilsha is a dangerous reef projecting $\frac{3}{4}$ of a mile from the south end of the island; at low water it dries for $1\frac{1}{2}$ cables, and a number of small detached patches also show; the east side of the reef is particularly foul.

The kirk of Rowsa shut in by the north-east end of Wyre, clears Egilsha Grand passing to the south-westward; the steeple of Egilsha kirk open to the westward of the southernmost cottage upon the shore, clears its west side; and Kirkwall cathedral on with Stromberry Ness (rather distant objects), clears it passing to the south-eastward.

HOWAN SOUND, between Rowsa and Egilsha, (more generally known to Orkney men as Rowsa sound,) is $\frac{3}{4}$ of a mile broad, and about 2 miles through, and is an excellent harbour for vessels of any size.

The north entrance is partly occupied by the holm of Skok Ness, a small green islet rising into a hill 40 feet high. It is shoal upon the north and east sides, and from the south end a long bank of rock and sand projects nearly across to Skail, in Egilsha; its outer extremity rising into a small skerry dry at low water.

The holm of Skok Ness divides the north entrance into two channels, the eastern of which (Howan sound proper) is blocked up by shoals, and the other, Skokness sound, is very narrow and crooked, for the shore of the holm dries off for a cable, and from the opposite side, a long reef named the Lang Taing, extends for a greater distance, leaving a navigable channel less than a cable in width; 15 feet may be had through Skokness sound, and 12 feet through Howan sound; but the tide-stream runs rapidly through both channels, and renders them unsafe for vessels.

In the sound, the Rowsa side is generally clear and bold, but the shore of Egilsha is foul. Off Skail is a rocky flat, which dries out for some distance; and $\frac{1}{4}$ of a mile farther to the southward there is a detached skerry, dry at low-water springs, lying $1\frac{1}{4}$ cables from the shore. Afterwards the

shore is clear for $\frac{1}{2}$ a mile to the storehouse of Vardy, or Vardie, where there is a rock with 17 feet upon it, $1\frac{1}{2}$ cables from high-water mark ; the coast then continues clear to the Grand.

DIRECTIONS.—Howan sound is the best harbour in the vicinity of Westra firth for vessels of more than 10 feet draft, as it is easy of access, and sufficiently wide for square-rigged vessels to turn into it in moderate weather ; the water is also of a convenient depth, and the ground good for holding.

The only impediment in the way of entry is the Grand of Egilsha. Be careful in passing along the east side of Egilsha not to haul up too quickly to enter the sound, as the east side of the Grand is very deceptive ; for this purpose, keep Kirkwall cathedral shut in upon Stromberry Ness, or when it is too hazy for this mark to be seen, keep fully $\frac{1}{2}$ a mile from the shore of Egilsha, until Rowsa kirk has been shut in upon Wyre, the mark to clear the south-west side of the Grand. Then proceed into the sound in mid-channel, and anchor in 10 or 11 fathoms, mud, to the northward of the manse of Rowsa, and rather nearer to that shore, or continue farther up, as the depths are ample.

In turning in or out, the Rowsa side may be approached closely, as it is bold ; but when standing to the eastward, keep the steeple of Egilsha old kirk open to the westward of the southernmost cottage in the island,—the clearing mark for the west side of the Grand.

DIRECTIONS for WESTRA FIRTH.—Approaching Westra firth from the westward, the course from Costa head, Mainland, to Sacquoy head, is E. by N. $\frac{1}{4}$ N. 5 miles ; from the latter to abreast Kili holm, S.E. by E., 5 miles ; and from thence to Green holm, S. by E. $\frac{1}{2}$ E., $3\frac{1}{2}$ miles. Closing the firth from the northward, it is S. $\frac{1}{4}$ W., 9 miles from the Noup of Westra to Faraclet head ; but upon this course it is necessary to keep the Noup well open of Inga Ness to avoid the skerries of Skea. When the Red head of Eda appears well open to the southward of the cottages of Rusland, or when the head is to the eastward of E. by S. $\frac{1}{4}$ S., Skea skerries, the only danger of importance in the firth, will have been passed.

CAUTION.—To ensure passing outside the skerries of Skea in light winds, while the flood-tide is running, the vessel must not be within a mile of the west side of Westra.

After passing Kili holm there is a clear firth 3 miles wide, and the strongest tide-stream runs towards War Ness and the Green holms, and from thence to the Gio of Shapinsha, so that by keeping towards Eda, the slack water between the south end of Egilsha and the north side of Shapinsha will be avoided.

Working in through Westra firth, it is advisable, in order to obtain the best of the stream, to keep upon the Rowsa side, and not to stand to the

northward within the line of the skerries of Skea and Wart holm, nor within the line of the latter and Rusk holm.

A vessel, by simply keeping near mid-channel, will pass safely through both Westra and Stronsa firths.

From Green holm to mid-channel between Rusk holm and Faraclet head, is N. $\frac{3}{4}$ W.; 4 miles, and then N.W. $\frac{3}{4}$ N. for the remainder of the firth. In going out, with a fair wind and daylight, there is no difficulty; but with the ebb and light winds, after Green holm has been passed the vessel's head must be kept to the westward, and every endeavour made to get upon the Rowsa side to avoid the skerries of Skea, which there will be no difficulty in effecting if it be set about in time.

In working out, after Green holm has been passed, work towards Kili holm in the strongest of the tide, and then upon the Rowsa side, as that shore is the boldest and has the smoothest water.

TIDE.—The flood-stream runs South along the west coast of Westra, from the Noup to the point of Skea, and over the Skea skerries. Between them and Rowsa the stream acquires a rate of 6 knots, and does not turn for two hours after high water on the shore. Its chief weight passes close round Kili holm, and crosses for War Ness and the Green holms.

A very weak stream runs south through Howan sound during the flood, but there is comparatively still water on the east side of Egilsha and the north side of Shapinsha.

ROOSTS.—During and after a westerly gale with the ebb, there are two bad roosts in Westra firth; the Rull, between Rap Ness and Rowsa, and the Rullard, off Sacquoy head. The Rull, the worst of the two, extends in a line from Wart holm to the Knee of Rowsa. The Rullard often breaks right across the firth, but it ceases with the ebb stream.

STRONSA FIRTH may be considered as beginning at Copinsha, having that islet, the Mull of Deerness, and the island Shapinsha, for its southern boundary, and the islands Stronsa and Eda to the northward.

From Stronsa firth, two minor channels, Eda sound and Shapinsha sound, branch to the north-east and south-west respectively. The length of the firth may be taken at 15 miles in a general north and south direction, while its breadth diminishes from $11\frac{1}{2}$ miles between Lamb head and Copinsha, to an irregular breadth of 3 miles between Eda and Shapinsha.

AUSKERRY, a low green islet, elevated 60 feet above high water, lies in the entrance to the firth towards the northern side, the centre of it being S.W. 3 miles from Lamb head. The lighthouse, 110 feet high, is situated on the south part of the island.

The shores of Auskerry are flat and shelving, particularly on its northern side, where a reef projects off for $\frac{1}{4}$ of a mile, and upon the west side, at

the north end, are the Lumma skerries, dry at low-water springs; the outermost is 2 cables from the shore. These rocks, with others from the Stronsa shore, render the channel into the firth north of Auskerry a rather difficult one to a stranger.

STRONSA, SOUTH and WEST SIDES.—Upon the south-west side of Lamb head, the south-east point of Stronsa (before described on page 119), a deep Gio breaking into the land nearly separates the head from the main island, and in one part, the connecting isthmus is so low and narrow, that the sea sometimes washes across it.

Immediately upon the west side of Lamb head is the bay of Clett, with the farmhouse of Housbay and a great breadth of cultivated land near its shore. This bay has from 6 to 7 fathoms in it, but it is rocky and unfit for shipping. Tor Ness, the south-east point of Rousholm bay, is low, with a long sandy beach upon its east side; it is fronted by shoal and rocky ground, and while navigating near, the house of Rousholm must be kept open of Tor Ness.

INGALE SKERRY, or Ingold skerry, lies prominently out from the south end of Stronsa between Lamb head and Tor Ness, and adds materially to the difficulty of navigating Auskerry sound. It is entirely covered at $\frac{3}{4}$ flood; at low water it dries for more than $\frac{1}{4}$ of a mile in a N.N.W. and S.S.E. direction, and the outer part is $\frac{3}{4}$ of a mile outside the point of Housbay, but the sea-weed shows at low water all the way to the shore, and on several shoal patches on either side. From the highest part of the skerry, Lamb head bears E. by N. $\frac{1}{4}$ N. rather more than a mile; Holland house, N. by W., $1\frac{1}{2}$ miles; and Tor Ness, N.W., nearly $1\frac{1}{4}$ miles.

AUSKERRY SOUND.—The pile on Knitchinfield hill, in Rowsa, on with the south-west cliff of Rousholm, N.W., is the mark for sailing through Auskerry sound, but, as the former object is distant, keep the Gio of Shapinsha well open of Rousholm head, and it will clear the Ingale passing to the south-westward. Burgh head open of Lamb head, clears the skerry passing to the south-eastward; and a pile on the east side of Rousholm head well open of Tor Ness, N.N.W. $\frac{3}{4}$ W., or the house of Rousholm open of Tor Ness, N. by W. $\frac{1}{4}$ W., clears its west side.

As the skerry does not extend so far as the middle of the sound, a vessel may run safely through by keeping one-third the breadth of the channel from Auskerry.

CAUTION.—The stream runs rapidly through Auskerry sound, and as there is often a very heavy sea with the weather tide, it must be considered upon the whole as a bad place.

ROUSHOLM BAY runs into the south-west part of Stronsa for 2 miles; it is a mile in breadth, and is directly open; the depths decrease gradually from 10 fathoms at the entrance, to the shore, and the head of the bay is occupied by a flat more than $\frac{1}{2}$ a mile broad, and bounded by a sandy beach $\frac{3}{4}$ of a mile long. The farmhouse and outbuildings of Rousholm are at the north-west corner of the bay; the slate-roofed house of Holland is a conspicuous object upon the east side, and at the storehouse on the shore below it, there is good landing in moderate weather. The peninsula of Rousholm, forming the western side of the bay, is clear of outlying danger, except off Greeli Ness, or Greenli Ness, its south-east extremity, where it is rocky and shallow for $\frac{1}{4}$ of a mile. Beyond Greeli Ness the shore is bordered by the cliffs of Rousholm head, and fronted by a few detached rocks, which a berth of 2 cables will clear.

Rousholm bay may be considered a good summer anchorage. A good position for coasters is upon the east side off the farm of Ditches, in 5 or 6 fathoms, with Anskerry nearly shut in by Tor Ness, but for shelter from westerly winds it is better to anchor well in upon the opposite side. Vessels bound to the northward arriving abreast Rousholm bay at the end of the ebb, will find it a handy place to anchor in to wait a tide.

Between Anskerry and Rousholm is an excellent fishing ground, named the Dowie sand, with 8 and 10 fathoms upon it; but over one spot, named Rousholm Baa, $\frac{3}{4}$ of a mile from the shore, with Green holm just open of Rousholm head, there are only 5 fathoms, generally marked in fine weather by the tide-ripple over it. With southerly winds and a flood tide, there is a dangerous toppling sea upon it, and it must then be avoided by keeping Ve Ness, in Eda, open of Rousholm head.

The south-west part of Rousholm head is a bank of boulder stones steep-to, and round which the tide rushes violently. Near it is Petworth, or Peatworth, where boats load with the peats cut upon the head. A little farther north is the Lyren, a reef extending from the shore, which is at this part devoid of any feature sufficiently marked to be distinguished by description. There are 5 feet upon the reef, and as little as 11 feet nearly $\frac{1}{2}$ a mile from high-water mark. Either Copinsha open of Rousholm head, or the house of Wasetter, in Sanda, open of Great Linga, will lead to the westward of it.

Northward of the Lyren, the shore of the peninsula to Linga sound is low, shallow, and rocky, and a berth of at least $\frac{1}{4}$ of a mile should be given it.

LINGA ISLAND, partly covering in Linga sound, a deep bay upon the west side of Stronsa, is sometimes termed Linga holm, and Great Linga. From its south-west side reefs dry out for $\frac{1}{4}$ of a mile; the west side is bold, but 2 cables from the north-west point there are but 10 feet, and a

shoal of 2 and 3 fathoms stretches from the same point towards Linkness, leaving between them only a narrow passage with 5 fathoms in it. This shoal is out of the usual track, but vessels working near it must tack before the house of Wasetter appears open to the eastward of Little Linga.

Swarf.—The principal danger near Linga is the Swarf, a flat and broadly-based reef dry at low water, and connected with the south-west end of the islet by a shoal bank, across which there is a narrow boat channel, safe for use only when the water is smooth. The Swarf considerably narrows and obstructs the southern and principal entrance to Linga sound, and should be marked by a beacon, for many vessels get upon it.

LINGA SOUND is a very safe harbour, but is rather difficult of access, for besides the Swarf, a flat from the shoal southern point a little within contributes to narrow the entrance, and a 2 fathoms' spit projects some distance from the southern shore; the south-east side of the bay is also very flat, and the depths in the middle of the harbour are irregular, the least water being about 16 feet. There is a depth of 4 fathoms in the entrance, and 6 fathoms may be found within, but Linga sound is a convenient anchorage only for vessels drawing 18 feet and under.

DIRECTIONS.—As the land is low and sloping, it is difficult at night to distinguish the entrance into Linga sound.

The leading mark in by day is the Ward hill hut over the school-house, E.S.E. $\frac{1}{2}$ S.; the former is upon the outline of the land, and gable-on; the latter is a slated building standing half-way down the hill. This mark clears the Swarf passing to the southward, and when Midgarth store (a dark-looking building upon the shore, with a few huts to the southward of it) appears well open of the south-east point of Linga, N.E., which clears the east side of the Swarf, the course must be altered for the anchorage, close under the south-east point of Linga, in 5 or 6 fathoms. Vessels occasionally anchor off St. Catherine store, with the Ward hill hut and the school-house in one, but in this position they are exposed to westerly winds, which send home a heavy short sea.

Wasetter house in Sanda open of Linga leads to the westward of the Swarf, and in working in, the southern point may be approached by the lead. Should a vessel in an easterly wind be unable to fetch into the sound, she may anchor close under the west side of Linga, in 5 to 8 fathoms.

Though there is good water through the northern entry into Linga sound, the channel is very narrow and unfit for general use, and no other direction for it beyond keeping in mid-channel can be given, as the shores upon either side are very flat.

In south-westerly gales, when a vessel is unable to fetch Deer sound, she has a fair wind to Linga sound.

Linga and Little Linga form the eastern boundary of the southern entrance into Eda sound, described on pages 138 and 139.

EDA, SOUTH SIDE.—Between Ve Ness and War Ness, the south-east and south-west points of Eda, is a small bay, near the middle of which a reef named the Taing of Maltbarn, dries off $\frac{1}{4}$ of a mile from the shore. Small vessels ride in summer at an anchorage called the Sand of Green, upon the eastern side of the reef, in 5 or 6 fathoms. A patch of rocks named War Ness skerry, dries for 2 cables from War Ness, with deep water a short distance outside it; the tide-stream rushes with great violence over this skerry, and in southerly gales and flood tide there is so bad a roost off this point, as to render passage near it impracticable.

To clear both the ledges above described, keep the cairn on the summit of the holm of Huip open of Ve Ness.

EDA GROINA and SOUTH SKERRY, or Eda Gruna and South Gruna, as they are sometimes termed, are two detached reefs lying off Ve Ness, and obstructing the navigation into and out of Eda sound; both reefs are surrounded by sand-banks, which fall suddenly to the eastward and westward. The shoalest part of Eda Groina (12 feet) lies with the south side of the holm of Huip on with the north side of Link Ness E. by N. $\frac{1}{4}$ N., and the kirk of Eda just shut in by Ve Ness, N. $\frac{1}{4}$ E.; the portion of this bank with less than 5 fathoms upon it is $\frac{1}{2}$ a mile long, and the channel between it and Ve Ness is $\frac{1}{2}$ a mile wide, with 8 and 9 fathoms in it. South skerry is separated from Eda Groina by a passage 3 cables wide, and 7 fathoms deep. A narrow ridge of this reef has only 15 feet upon it.

These sunken reefs are cleared passing to the south-westward by keeping the Knee of Rowsa open of War Ness, and to the southward by keeping the house of Clestron in Stronsa open to the southward of Linga. The manse of Eda open of Ve Ness clears them passing to the eastward, and the Red head of Eda, shut in over Ve Ness, clears their west side; while, to pass between them and Ve Ness, the cairn on the holm of Huip must be kept just open to the southward of Little Linga.

As War Ness is at the north-west extremity of Stronsa firth, the southern side of the firth will now be described.

COPINSHA, views of which are given on page 92, is of remarkable outline, and consequently extremely valuable in marking the southern side of the entrance into Stronsa firth. Seen from the north-eastward and south-westward the islet appears as a right-angle triangle with the perpendicular to the south-eastward; but from the south-eastward nothing but a range of cliffs 211 feet high is seen, the remainder of the islet being hid by them.

The Horse of Copinsha, an equally well-marked feature, is N.E. $\frac{1}{2}$ a mile from the north-east extremity of Copinsha ; it is a rectangular mass of rock 59 feet high, and destitute of vegetation. The passage between the Horse and Copinsha is named Horse sound, in the middle of which is a small and steep rock, having but 9 feet upon the shoalest spot. As a general rule, it is recommended to vessels to pass outside the Horse, as nothing is gained by going through the sound ; but in a case of emergency the rock will be avoided by keeping nearer to the Horse than to Copinsha.

Corn, Wart, and Black Helms, just within Copinsha to the north-west, are all connected with it by a beach and by reefs dry at low water. The barrier thus formed is taken advantage of by coasters for anchorage in off-shore and south-westerly winds.

Copinsha Sound, or passage between Black holm and Air point in Deer Ness, should not be attempted by strangers, for it is nearly barred by a reef, through which there are gaps with 3 and 4 fathoms in them. From Black holm a ledge extends to the north-west with 9 feet upon it at 2 cables from the holm, and Air point, upon the opposite side of the passage, is fronted by foul ground, amongst which there is a skerry almost awash at low-water springs $\frac{1}{4}$ of a mile from the shore, and another rock with a foot upon it lies $\frac{1}{4}$ of a mile farther to the south-westward. From the latter skerry, the reef with 18 feet over it in some places, extends towards that from Black holm, a gully, a cable wide and 5 fathoms deep, separating them. North-eastward of Black holm is a shoal spot of 4 fathoms, named the Danger, upon which the sea breaks occasionally in bad weather.

With moderate weather and a lee-going tide, a vessel may pass through the sound safely. The mark used in going through from the northward is Skiel kirk upon the shore of Deer Ness, with a dark roof and a belfry at the west end, kept in sight outside Airbrae, until Dingys How, a triangular hillock near the isthmus of Deer Ness, appears open of the cliff of Sandisbrae ; but the How is sometimes very indistinct.

Foul ground, however, is not the only objection to using Copinsha sound, for a very bad roost is formed in it occasionally with the weather tide, the sea breaking heavily right across, and no vessel should then attempt it.

DEER NESS, a peninsula 4 miles long and $3\frac{1}{4}$ miles across at the broadest part, is connected with the south-east extremity of Mainland. From Air point to the northward the coast falls back to the shallow bay of Sandside ; off it is the skerry of Skiel, or Sandside, covered at high water, but some part of it showing at the first quarter ebb. There is no passage for vessels between the skerry and the shore, though coasting vessels occasionally

anchor within it, in the north bay, to take in cargo. From the highest part of the skerry Skiel kirk appears end on, and is $\frac{1}{2}$ a mile distant; to clear the rock $\frac{1}{2}$ of a mile to the eastward, keep the Mull of Deer Ness open of the Brough.

From the point of Sandside the coast is again bordered by low cliffs, and continues straight for nearly a mile to the Brough of Deer Ness; here the shore is broken, and the Brough is nearly separated from the adjacent land by a deep ravine; the ruins of an ancient chapel stand on it, and there is a detached stack rock in front.

From the Brough to the Mull is a range of high cliffs free of hidden dangers.

MULL of DEER NESS is a high bold head, having behind it a low flat-topped hill, with a pile on its summit; the head is bold to upon all sides; a view of it is given on page 91. There are several reasons why a light on the Mull head would be of great advantage to vessels navigating in its neighbourhood; the principal of which is, that it would serve to lead when refuge was required either to Deer sound, or to Inga Ness or Kirkwall bays (all harbours of easy access), with far greater certainty than Long Hope is now run for by the aid of Pentland skerries lights.

DEER SOUND has its outer entrance between Mull head to the south-east and Rerwick head to the north-west, which are 3 miles apart; and from them the shores gradually converge to the entrance proper, $\frac{3}{4}$ of a mile wide, between Tanker Ness and the northern shore of Deer Ness, within which, the sound is more than a mile across, and here is the usual anchorage, for although the sound continues for $2\frac{1}{2}$ miles farther, it is in general too irregular and shoal for any but small vessels.*

The depth between the outer heads is 17 fathoms, but it soon decreases to 7 and 6 fathoms, and the bottom of the outer harbour or roadstead is coral. The inner harbour, to reach which a bank of 3 fathoms must be crossed, has 4 or 5 fathoms, sand and mud.

About $\frac{3}{4}$ of a mile to the westward of the Mull of Deer Ness the land falls into a small bay, off which, vessels occasionally anchor while waiting for a fair wind, but the water is deep, 10 fathoms being found $\frac{1}{4}$ of a mile from the land. The Deer Ness shore continues clear and bold to abreast Tanker Ness, when it becomes flat and increasingly so at Micady or Mercadi point, from whence a sandy ridge of 2 fathoms and under joins a 6 feet bank near the middle of the sound.

From Rerwick head on the opposite side, the shore is bold to Tanker Ness, which is flat and foul on both sides; and in front of it Tanker Ness reef projects out for 2 cables, half of which is dry at low water. Upon the

* See Admiralty chart of Deer sound, No. 2,583; scale, $m = 3$ inches.

west side of the ness is a sandy spit, named the Taing of Barn, projecting parallel with, and as far out as the reef, and then continuing as a bank right across the harbour to Micady point; but as the least water upon this part of it is 18 or 20 feet, it is no bar to the majority of vessels frequenting the port.

The western extremity of the Taing of Barn is marked by a *red* buoy, moored in 18 feet at low-water spring tides; with Tanker Ness E. by N. $\frac{1}{2}$ N., Deer hill station S.E. $\frac{1}{2}$ E. (easterly), and Micady point S.W. by. S.

From Tanker Ness westward the coast is flat, and about half way between the ness and the pier is another shoal, named the Taing of Bemen, having at 2 cables from the shore, a depth of only 9 feet upon it. This taing projects in a direction towards the shoal of 6 feet in the middle of the sound, and is separated from it by a channel $\frac{1}{2}$ a mile wide, and 3 and $3\frac{1}{2}$ fathoms deep. Within the taing the water deepens to 5 fathoms, and then shoals gradually towards the shore. A buoy upon the 6-feet bank would greatly facilitate the navigation.

In the upper portion of the sound, between Micady point and the opposite shore, there is a depth of 4 fathoms, but to reach it, a vessel would have to pass the north-west side of Micady point, in only 8 or 9 feet. The depth of 4 fathoms is maintained upon the western shore nearly as far as Campston, but the whole of the eastern side is very shallow, over soft mud. The head of the sound is specially available for small vessels having to make a stay.

DIRECTIONS.—From the Mull of Deer Ness, a West course, or thereabouts, according to the distance off, leads up to Tanker Ness, which must be given a berth of 3 cables, or keep through in mid-channel until the pile on the summit of Wideford hill appears just open to the southward of Tankerness hall, which may readily be known by its castellated tower and garden walls; then keep this mark on, and anchor $\frac{1}{2}$ a mile within Tanker Ness in 6 fathoms, sand, with the Mull head nearly on with the reef of Tanker Ness, or proceed $\frac{1}{2}$ a mile farther to a more secure anchorage, with the manse on with the houses at the pier, where there are 5 fathoms and good holding ground.

In working into Deer sound, the south shore may be approached by the lead nearly up to Micady point. Standing to the northward, towards the Taings of Barn and Bemen, tack before the summit of Wideford hill appears on with the hall of Tankerness; and in standing to the southward, do not open the manse to the southward of the pier end, in order to avoid the 6-feet bank.

SHAPINSHA, EAST and NORTH SIDES.—Between Rerwick head and Haco Ness (pronounced Hacks Ness) in Shapinsha, is Shapinsha

sound (page 156). Haco Ness, the south-east extremity of Shapinsha, is a low green point bordered by reefs drying out $1\frac{1}{2}$ cables, and with the whole of the eastern side of the island should have a berth of $2\frac{1}{2}$ cables. From Haco Ness, the coast rises to the north-eastward into a high perpendicular cliff, named the Foot or Fort of Shapinsha; it then declines in height, and is broken and ragged to the Gio, the north-east point of Shapinsha.

GIO NESS.—There is no anchorage upon the eastern side of Shapinsha, as there are 15 fathoms within $\frac{1}{2}$ a mile of the shore; but parallel to it, and more than a mile off, are the Baas of Linton, a sand-bank, probably deposited by the tide, with 8 to 10 fathoms upon it, but upon one spot with Green holm just open of Gio Ness, there is as little as 5 fathoms, bright sand. This bank is steep on both sides, and will be avoided by keeping Green holm well open of or shut in by Gio Ness. The latter promontory is steep-to, but a small bay upon the west side of it should have a berth of $2\frac{1}{2}$ cables.

VEANTRO BAY.—From Holmstein point, $1\frac{1}{2}$ miles to the westward of the Gio, the lands bend round to the south-west and westward, and forms Veantro bay, $1\frac{1}{2}$ miles broad and deep. The western half is occupied by a sand-bank with less than 2 fathoms upon it; but in the eastern portion there are 5 and 6 fathoms, and the ground is good, and here vessels often ride in the summer season when bound to the southward and waiting tide. The usual anchorage is with the Ward hill of Gairsa over Galt point, or with Gio Ness just shut in by the cottages near Holmstein point, in 5 fathoms, coral bottom.

GALT NESS and SKERRY.—Galt Ness, or Walt Ness, forming the western boundary of Veantro bay, shelves down from higher ground behind it. Upon its north-eastern side is Galt skerry, an extensive flat ledge entirely covered at high water, and between it and the point is a narrow channel with 12 feet in it. At low water the skerry dries for 2 cables, besides which, Galt point shelves out for more than $2\frac{1}{2}$ cables, and both are much in the way of vessels rounding Shapinsha to and from Kirkwall. On the north end of Galt skerry there is a *black* buoy moored in 4 fathoms low-water spring tides. As the house of Greentaft in Eda in one with Little Green holm leads over the skerry, it is necessary in order to pass to the north-westward of it, to keep the house between the Green holms. To clear the west side of the skerry, keep the outermost of the cottages on Galt point clear of the intervening land, or keep Kirkwall cathedral open of Stromberry Ness. Rousholm head, in Stronsa, on with Gio Ness, leads $\frac{1}{2}$ a mile to the north-eastward of Galt skerry.

GREEN HOLMS, the two small green islets dividing Westra and Stronsa firths, have between them at low water only an intricate boat passage.

Little Green holm and the west side of Green holm are flat, and must have a good berth, but the east side and the north-east point of Green holm are steep-to.

DIRECTIONS for STRONSA FIRTH.—The navigable condition of Stronsa firth presents the greatest contrasts at different periods; for several months together the smallest boat may cross it with safety, but with southerly gales and a spring flood, it would be dangerous to vessels of any size.

The average depth in the firth is about 20 fathoms over a rocky bottom; this depth occurs between Auskerry and the Mull of Deer Ness, and between Rousholm and the Gio of Shapinsha, but it decreases to 15 fathoms between the latter point and Green holms.

As already observed, a vessel should enter Stronsa firth to the southward of Auskerry, in preference to passing through Auskerry sound, for the latter is not a desirable place for a stranger to be in, and it is seldom that anything is gained by using it.

Running through Stronsa firth, the course and distance from the Horse of Copinsha to the Mull of Deer Ness are North 4 miles, and from the latter to the Gio of Shapinsha, North $7\frac{1}{2}$ miles.

In working into Stronsa firth, a vessel having weathered the Horse of Copinsha may reach the Mull of Deer Ness while the flood tide is running, as an eddy then sets along the shore of Deer Ness towards the Mull. The strongest tide in the firth is experienced with Green holm just open of the Gio, or with the Horse of Copinsha open of the Mull; therefore, in standing to the westward, do not lose sight of either of these objects, and for the same reason, while standing to the northward, do not shut in War Ness behind Rousholm head. The stream runs very strong round the Gio of Shapinsha, and then sets right for Green holm, which it is better to pass on the north side.

There is an eddy during the latter half of the flood under the east side of Shapinsha, and in this a vessel may hold her own in northerly winds while waiting the turn of the tide.

TIDES.—The main stream of flood past War Ness, running 7 knots, joined by the stream from Eda sound, sets past Rousholm head, and clear of Auskerry to the open sea; and from the Green holms, past Shapinsha and Deer Ness, where it is joined by the String, the usual name for the direct run of the stream from Eynhallow sound by Gairsa, Hellyar holm, and Deer Ness; its rate between Shapinsha and Rousholm is 6 knots, and between the Mull of Deer Ness and Auskerry about 4 knots.

ROOSTS.—During and after westerly gales with the ebb, there are roosts off the Mull of Deer Ness, the Gio of Shapinsha, and War Ness, and there are also roosts off the same points with southerly gales and flood

tide, in which a vessel would be unmanageable, and probably founder. These roosts are generally as evident as the breakers upon the shore, and so long as there is wind enough to enable a vessel to over-run the weather-tide, it will be safe in working to pass close to them, as the sea upon the lee side is smoother in proportion to the violence of the breakers.

EDA SOUND, the connecting channel between the North sound and Stronsa firth, is, compared with most of the sounds in Orkney, a smooth and tranquil sea. It is formed between the south-west end of Sanda, the holms of Spur Ness, and Link Ness to the eastward, and Eda and the Calf of Eda to the westward. The eastern shore will be first described.

SANDA, SOUTH-WEST SIDE.—From the holms of Eyre and Whal point to Ruthy Taing, the north point of the bay of Herma Ness, or Hermansgar, the coast is low and bold. The peninsula of Herma Ness separates the bays of Herma Ness and Brough; the former is shoal and rocky, but the latter, though exposed to northerly and westerly winds, is used by coasters and other small vessels for a temporary stay; the depths between the points average 6 fathoms, over a bottom of rock covered by sand.

The Bow of Herma Ness is a long sunken reef, extending to the north-west for more than $\frac{1}{2}$ a mile from Herma Ness, with 8 and 9 feet upon it, and must be carefully avoided.

Cuthe Bank.—In the offing abreast, and in a line between Whal point and the Grey head of the Calf of Eda, is the Cuthe bank, a small knoll of sand with 10 fathoms upon it, and 18 to 20 fathoms about it. A vessel is said to have foundered in the broken sea upon it.

From Brough bay to Gronafea, $1\frac{1}{2}$ miles, the coast is very broken, and is fronted by numerous detached rocks, lying out for $1\frac{1}{2}$ cables; and from Gronafea to the small green peninsula Lamba Ness, nearly abreast Lashy sound, the shore is low and shelving, backed by well-cultivated land ascending in a gentle slope to the long hill, the Ward of Sanda, upon the outline of which, the house of Wasetter, a useful sea-mark, is very conspicuous.

In the pool upon the north-east side of Lamba Ness, are the remains of an old pier that was built for the formation of a boat harbour. Braewick, the shoal rocky bight upon the south-west side of the ness, has no anchorage. The shore of Sanda from Stranquoy Taing to Spur Ness, is bold and free from outlying dangers. The holms of Spur Ness and Little Linga, forming the remainder of the eastern boundary of Eda sound, have been described on pages 116 and 117.

CALF of EDA, near the north entry, and upon the opposite side of Eda sound, is separated from Eda by Calf sound (page 140). The Calf is free of

danger all round at a moderate berth, except at its south-eastern end, where several rocks lie out and constitute the principal danger in passing into and out of Eda sound; they are named respectively the Scroggs, Lashy skerry, and the Bow, but they are only the highest portions of one reef, which projects in an easterly direction for $\frac{1}{2}$ a mile. The Scroggs, those nearest to the shore, appear at low water, and are separated by narrow channels, 3 and 4 fathoms deep; the tide stream rushes over the rocks, and through the openings. Lashy skerry, near the middle of the reef, is generally to be seen, as it is only covered at the last quarter-flood; at low water it dries for a cable, and then appears as three distinct rocks. The Bow, at the outer part of the reef, has 4 feet upon it, and from its advanced position is exceedingly dangerous.

EDA, EAST SIDE.—The whole of the east side of Eda is bold and free from danger. In the small inlet, Mill bay, there is anchorage for fishing boats only, but in the bay of Lonton vessels may wait tide; as, however, the water shoals in it very suddenly, it is necessary, except with vessels of light draft, to drop the anchor in 11 fathoms. A mile to the southward of Lonton, there are several churches and houses which are prominent objects even at a distance; behind them the land is considerably elevated, and the Ward hill near the south end of the island, has a pile on its summit of great use as a sea-mark. The bay of Bacaskeal upon the north side of Ve Ness is the best stopping-place for large vessels in the summer; indeed, if well found, they might remain in it through the winter. There are 10 fathoms over a stony bottom $\frac{1}{2}$ of a mile off shore, and the best berth is off a cottage named Banks, the only one upon the shore of the western side of the bay. Ve Ness, and the shoals off it, are described on page 132.

DIRECTIONS for EDA SOUND.—The critical portion of the navigation of Eda sound, called Lashy sound, between the Calf of Eda and Sanda, is not so safe a passage to vessels coming from the northward as Calf sound, which will presently be described.

To sail through Lashy sound, which is rather more than $\frac{1}{2}$ a mile wide, the pile on the Ward of Eda kept open to the southward of the Established kirk of Eda standing upon the shore, leads to the south-eastward of the Bow, or the pile brought over the windmill will lead through in mid-channel. The deep water is upon the Sanda side, and by keeping a couple of cables outside the stream of the points, a vessel will have 8 to 12 fathoms water. Having passed the Calf of Eda, keep in mid-channel through the remainder of the sound, taking care in entering Stronsa firth, to attend to the marks for avoiding Eda Groina and the South skerry off Ve Ness, given on page 132.

In turning through Lashy sound, the broken water and confused swell increase the risk to a vessel of missing stays, and those who are well acquainted with the sound, place their vessels in a proper position, and drift through with the tide-stream, which runs rapidly. Afterwards, the shores on either side are bold, and may be approached closely, but the western side of the holms of Spur Ness, being rather flat, should have a berth of 2 cables.

CAUTION.—Lashy sound is a dangerous passage during and after a northerly gale, for then a roost extends right across from the reef to Stranquoy Taing, and breaks violently during the ebb for the whole distance. In a calm, when the roost is as dangerous as at other times so long as the swell lasts, the anchor must be let go promptly, to prevent the vessel being driven into the race and upon the rocks, for the tide-stream rushes directly over them. Should, however, a vessel be drifting out of Eda sound, she will go clear, provided she keeps well upon the Sanda side.

CALF SOUND.—The passage between Eda and the Calf of Eda has its northern entrance between two bold headlands, the Red and Grey heads, which are very prominent objects, even from a considerable distance in the offing, being in strong contrast to the low coasts on either side. Red head, upon the western side, is a noble perpendicular cliff 209 feet high, and Grey head is of nearly equal elevation.

Calf sound, which first runs in to the south-west and then to the south-eastward (thus forming a right angle), is at one part not more than $\frac{2}{3}$ of a cable wide, and a very rapid tide stream pours through it; and though the water is deep enough for vessels of any draft to sail through it with a fair wind, it is unfit for anchorage or the passage of square-rigged vessels, excepting in fine weather.

The west and south sides of the Calf of Eda are generally bold. The spot is still shown upon the south-west point of the islet, where the notorious Gow, the original of Sir Walter Scott's "Pirate," was wrecked.

About $1\frac{1}{2}$ cables outside Red head is the skerry of Red head, a rock dry at low water; there is a narrow boat passage within it. Red head is bold-to, but after passing the beach, or rather wall of boulder stones (for such it resembles in the regularity with which it is piled up), and where there is a hut for curing fish, the shore becomes more shelving, and continues so to the bight at Carrick; here, a little above the brae, is the ruin of a cottage, consisting of one gable and a chimney; farther on is a large white house upon the shore, and a little beyond it to the eastward, is a store-house; the sound then becomes considerably contracted, but the shores are clean and bold. A few small rocks awash at low-water springs, named

the Hen and Chickens, extend for $\frac{3}{4}$ of a cable from the south point of the entrance.

DIRECTIONS.—Square-rigged vessels may sail through Calf sound either way with a fair wind, but only small fore-and-aft craft can work through. By keeping in mid-channel for the whole distance there will not be found a less depth than 7 fathoms, and the shores, except at the immediate entrances, are bold and free of danger. In entering from the northward, the house of South Mire, near Lamba Ness in Sanda, kept open of Grey head, will clear Red head skerry passing to the north-eastward, and Carrick house kept in sight, clears its south-east side; and in leaving the sound, the ruined cottage upon the incline of the hill at Carrick bight kept open of the storehouse, leads to the north-eastward of the Hen and Chickens and the kirk of Eda open of Greenie brae leads to the south-eastward of them.

The usual anchorage is in Carrick bight, with the chimneys of Carrick house in line, and the pile on the Ward of Stove, in Sanda, just open of the merchants' house; here, in $3\frac{1}{2}$ fathoms, sand, a vessel will be out of the strength of the tide, but the anchorage space is small, for there are 7 and 8 fathoms, rocky bottom, $\frac{1}{2}$ a cable outside the above position.

CAUTION.—The flood and ebb streams set respectively across the north and south entrances of Calf sound right down upon Lashy rocks; and in light winds, a vessel missing either entrance must immediately drop a kedge or larger anchor, and hold on till the wind freshens or the tide becomes slack. A vessel drifting in calm weather down Eda sound must pass very close to Greenie brae to be set into Calf sound; when in the latter, should the roost at the north entry be bad, she can bring up, which she could not do in Lashy sound.

It may be observed here of strong tide-ways in general, and of that through Calf sound in particular, that they have a tendency to set a vessel out of the strongest current into an adjoining eddy, and from this cause it is difficult to drift out of Calf sound with light winds, as the stream generally drives the vessel towards Grey head.

CHAPTER IX.

ORKNEYS.—EYNHALLOW SOUND.—WIDEFIRTH.—SHAPINSHA SOUND.

VARIATION IN 1876.

Costa head	-	-	23° 0' W.		Haco Ness	-	-	22° 35' W.
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EYNHALLOW SOUND, separating the island of Rowsa from Mainland, is 7 miles long and $\frac{3}{4}$ of a mile wide at its narrowest part: the islands Rowsa and Wyre are upon its north-east side; Mainland is to the south-west; the small island Eynhallow lies a little within the entrance and near to mid-channel, while the island of Gairsa terminates the sound and divides it from Widefirth.*

ROWSA, NORTH-WEST and SOUTH-WEST SIDES.—From Sacquoy head, noticed on page 125, the north-west coast of Rowsa to the low shelving point of Quendale is clear and bold, and is bordered by low cliffs. Skabra head is a low cliff and steep-to, and beyond it, the shore as far as West Ness bay, is in general fronted by ledges extending from one to two cables. Afterwards the coast is comparatively bold for the remainder of the distance through Eynhallow sound. There is summer anchorage for small vessels off Westness bay, but the holding ground is not good, and the water deepens rapidly from 4 to 10 fathoms.

At the low point of Tretland, the coast of Rowsa, leaving Eynhallow sound, turns more easterly, and forms the north side of Wyre or Weir sound. In front of Tretland point is a bank or bar, obstructing the west entry into Wyre sound, and at $1\frac{1}{2}$ miles farther, opposite Tremlin point, an extensive sandy spit, with 7 and 8 feet upon it, stretches south-eastward for two-thirds the distance across the sound; the coast then continues clear to the point of Avilsa, the south-east extremity of the island, and the divisional mark between Wyre and Howan sounds. A little westward of Avilsa point, the Established and Secession kirks, and the manse of the latter, form a conspicuous group of buildings.

WYRE or WEIR ISLAND, upon the south side of Rowsa, is of a triangular shape, moderately elevated, and well cultivated; several ledges project for more than a cable from its southern side, which should have a berth of $2\frac{1}{2}$ cables; but the eastern and northern sides are clear of danger

* See Admiralty charts:—Orkney islands, No. 2,180; scale, $m = 0.5$ inches; and Scotland, east Coast, sheet V., No. 2,181; scale, $d = 15\frac{1}{2}$ inches; also approaches to Kirkwall, No. 2,584; scale, $m = 3$ inches.

at one cable off. A knoll of 3 fathoms lies off the eastern side of Wyre, at some distance from the shore, and is an obstruction to heavy vessels entering Howan sound.

From the north-east point of Wyre, a sand-bank, with 12 feet upon it, extends in the direction of Avilsa point, and narrows the eastern entry of Wyre sound; the shore of the island then continues flat as far as the first storehouse, and is afterwards bold to the next storehouse upon the shore near the west end of the island, from opposite which the bank or bar of 4 to 6 feet, already alluded to, trends north-westerly towards Tretland point in Rowsa.

Wyre Skerries consist of four or five separate reefs, which dry at low water, near the west end of Wyre island, from which they are only separated by a gully or boat passage; the sea-weed upon them shows for a space of 3 cables. The southernmost skerry, which lies with Costa head just open of Aiker Ness, should be marked by a beacon for the convenience of the coasting trade, as it is one of the principal dangers in the navigation of Eynhallow sound.

WYRE SOUND, between Rowsa and Wyre, runs in an east and west direction, and is 2 miles long and at least $\frac{1}{2}$ a mile wide; the course through it is rendered tortuous by the projecting spits already described.

In entering Wyre sound from the westward, Wyre island and skerries must be carefully avoided, as the channel, in which there is a depth of 26 feet, is close over towards Tretland point. The leading mark through is the cottages of Osnabuster, standing upon the summit of Wyre island, near its north-east end, kept over the easternmost storehouse upon the shore, bearing E.S.E.; the same mark also leads to the southward of the long sandy spit stretching out from Tremlin point. While near and abreast the storehouse, keep upon the Wyre side of mid-channel, and when the storehouse has been passed, haul out north-easterly for the anchorage.

In entering Wyre sound from the eastward, the spit from the north-east point of Wyre is the only obstruction, and this will be avoided by keeping well over towards Avilsa point.

The usual anchorage in Wyre sound is in mid-channel a little to the westward of the kirks, in 7 fathoms, but every part of the sound, where there is sufficient depth, is protected in all winds.

TIDES.—One very weak stream passes eastward through Wyre sound, and another south of Wyre island.

EYNHALLOW (the Holy island) is inhabited and partially cultivated; the north and west sides are bold, but the south-east and south-west sides are flat and foul. A skerry between Eynhallow and Rowsa nearly blocks up the passage on that side, and Eynhallow skerries, which dry at low

water, are $\frac{1}{2}$ a mile to the south-east of the island, and connected with it by a sandy ridge having less than 6 feet upon it. At the skerries, Costa head is on with the high-water mark of the south side of Eynhallow N.W. $\frac{1}{4}$ W., and the barrow on the Ward of Gairsa is just open of Aiker Ness S.S.E. $\frac{1}{4}$ E.

COSTA HEAD, the north point of Mainland, and the south-west point of the entrance to Eynhallow sound, is a conspicuous object, being bordered by cliffs upwards of 400 feet in height: the crest of the head, $\frac{1}{4}$ of a mile inland, is 470 feet above the sea, and slopes steeply down to the northward. The cliffs terminate in a low point a mile within the head, when the coast turns south-easterly into the sound.

From Costa head to the south-eastward the coast is foul, and should have a berth of $\frac{1}{2}$ a mile. At $1\frac{1}{2}$ miles there is a reef, named the Braga, with less than 5 fathoms on it $\frac{1}{2}$ of a mile from the shore, and only 17 feet at 2 cables from high-water mark; during a westerly swell the sea breaks violently upon it. The coast continues foul to the Brough of Burgar, where the reef of Burgar projects from the shore, with 15 feet upon it at 2 cables from high-water mark. A bar of 28 feet connects the reef with Eynhallow, and over it is formed the Burgar roost.

AIKER NESS.—From the reef of Burgar the shore is flat to the sands of Evie, heading the little bay upon the west side of Aiker Ness. There is fair summer anchorage off them in 5 fathoms, but the ground is rocky, except close in-shore. The square flat point Aiker Ness, which is well cultivated, is easily recognised by the large farmhouse standing by itself on the low ground. A small rock, named the Quoy, with 7 feet upon it, lies out 2 cables to the northward of the north-west part of Aiker Ness.

A small bay upon the south-east side of the ness would form an excellent harbour, as it is covered in by a mud-bank, with only 3 and 4 feet water upon it at low-water springs; the depth within is $3\frac{1}{2}$ fathoms, but the space is limited. The entrance, with 3 fathoms in it, is from the westward, and as the water is always smooth, and the bottom is soft, a vessel would take no injury by trailing upon the ground.

Woodwick, $1\frac{1}{2}$ miles from Aiker Ness, is a small bay affording berthage out of the stream of tide, but it is too much exposed to be a secure anchorage in the winter. A considerable portion of the head of the bay is dry at low-water springs, and outside it is a bank of soft ground, having upon it 13 feet at low-water springs; between the end of this bank and the storehouse upon the north-east point of the bay there are 5 fathoms, and at the anchorage from 5 to 6 fathoms, sand and mud.

From Woodwick to the holm of Rendal the coast is flat, and should not be made free with.

GAIRSA NORTH and WEST SIDES.—Gairsa, at the inner end of Eynhallow sound, is an islet a mile across, and has from most directions the appearance of a single round hill. Langskail point, its west extremity, is a low beach, having on it an old ruined barn, much used as a sea-mark; the large farmhouse of Langskail is a cable to the eastward of it. The west shore of the islet is flat, but with no outlying dangers. Upon its north-east side is Swine holm, a small uninhabited islet, with a narrow boat passage within it. Between Swine holm and the Hen of Gairsa, a small peninsula at the south-east extremity of the islet, there is good summer anchorage in 6 fathoms, just within the line of the outer points.

GAIRSA SOUND, the channel between Gairsa and Wyre, is a mile across, but an extensive sandy flat or spit, extending from the north sides of Gairsa and Swine holm, confines the deep-water channel to the opposite side of the sound. The general depth over the flat is 3 and 4 fathoms; there are, however, several shoaler patches upon it; midway across the sound there are places with only 2 fathoms, and at one spot near the western spit, $\frac{1}{2}$ a mile to the southward of the west end of Wyre, there is as little as 7 feet. Costa head, a short distance within the point of Aiker Ness, or the south side of Eynhallow touching Aiker Ness N.W. $\frac{1}{2}$ N., leads right across it. In the deep-water channel of the sound there is a depth of 9 fathoms.

DIRECTIONS for EYNHALLOW SOUND.—The two narrow sounds on either side of Eynhallow are generally named the Burgar roost and Wael roost; through the latter, which is the northernmost, there is no safe ship channel on account of the skerry lying out from Eynhallow, and also from the velocity of the tide-stream resulting from the great contraction.

Burgar roost is a safe passage, except during and after westerly gales, when the sea breaks right across. The least water in this channel (28 feet) is abreast Eynhallow.

On entering the sound from the westward, the Braga, to the south-eastward of Costa head, is avoided by keeping the barrow on the Ward of Gairsa open to the northward of Aiker Ness house.

In passing through Burgar roost, keep the barrow on the Ward of Gairsa on with the house of Aiker Ness S.E. by S.; this leads in mid-channel and clear of Burgar reef.

The channel within Burgar roost passes between Eynhallow skerries and the Quoy rock off Aiker Ness. The skerries are cleared on their southern side by keeping Swine holm just shut in by Aiker Ness, and on their eastern side, in not less than 20 feet, by keeping the schoolhouse and manse of Aiker Ness in one, bearing S.W. $\frac{1}{4}$ S.

water, are $\frac{1}{2}$ a mile to the south-east of the island, and the low mark for the Ward of Gairsa head is on with the high-water mark of the Ness S.S.E. $\frac{1}{4}$ E.

COSTA HEAD, the north point of the south-east bay of Aiker Ness is cleared by cliffs upwards of 400 feet in inland, is 470 feet above the sea. The cliffs terminate in a low point which turns south-easterly into the entrance to Eynhallow sound, and the high-water mark of the west Ness S.S.E. $\frac{1}{4}$ E.

From Costa head have a berth of $\frac{1}{2}$ mile with less than 2 cables violently where the high-water mark of Aiker Ness, N.W. $\frac{1}{4}$ N. reaches the south-west point of Shapinsha, open of the barn to the westward of Wyre skerries, and a vessel will pass to the south-westward of them, in 4 fathoms water, by the cliff of Costa head just plumbing the high-water boundary of the shore at Rendal. If working in this passage, when standing to the south-westward, to avoid the bank off Woodwick, do not shut Aiker Ness in; and in standing to the eastward keep Stromberry Ness open of the barn on Langskail point, to clear the flat to the northward of Gairsa. If intending to pass through Gairsa sound, when abreast the west end of Wyre keep Costa head a little open of Aiker Ness.

TIDE.—From the Brough of Birsa the flood sets along shore for Costa and Sacquoy heads, increasing in velocity as it approaches Westra firth. The influence of the in-draft occasioned by Eynhallow sound, is scarcely felt outside the line of Costa head and the reef of Quendale.

The flood-stream from Costa head and the reef of Quendale divides near Eynhallow, and passing Burgar and Wael roosts at 7 knots an hour, reunites beyond the island, but its rate does not average more than 4 knots through Eynhallow sound.

It is high water, full and change, at West Ness in Rowsa at 9h. 11m. Springs rise 10 feet; neaps $7\frac{1}{2}$ feet.

WIDEFIRTH, the sea enclosed by Gairsa, Shapinsha, and Mainland, and from whence Wideford hill, near Kirkwall, has derived its name, is, over the northern half of it, extensively occupied by small holms and rocks, in two principal groups, through which there are two intricate channels. After the dangers have been described, the pilotage of each passage will be given.

GAIRSA, SOUTH-WEST and SOUTH SIDES.—Between Langskail Bora Ness, the west and south-west extremities of Gairsa, is a shoal occupied by reefs. From Bora Ness the land trends easterly to a point named Millburn, formed under the west side of the Hen of Gairsa peninsula at the south-east extremity of the island. A shoal of 5 feet upon it, extends from the Hen half-way to Bora Ness, forming the channel between the latter and Gairsa both shoal and deep. There are 4 fathoms in Millburn, but the space is too narrow for a vessel to swing at anchor, though she might be secured in it in safety. To enter from the eastward, wait till half-tide; keep nearer to Bora holm than the Hen, to avoid the reef off the latter, and then continue in, in mid-channel. If from the southward, sail close along the shore of Bora Ness, so as to avoid the foul ground upon the west side of the holm of Bora.

Bora Holm and Skerries.—The Holm of Bora is a small green islet, $\frac{1}{2}$ a mile to the south-east of Bora Ness; its eastern side is bold, but to the westward of the holm are Bora skerries, three distinct rocks, two of which are just covered, and the third nearly awash at low-water springs; their position is generally shown by broken water. The 'thwart mark for the southernmost rock is the Ward of Gairsa on with the school-house of Gairsa (the cottage highest up the hill) N. by E.

Between Bora Ness and the skerries is a shoal patch with 9 feet upon it, and between the ness and the holm occurs another with as little as 6 and 7 feet, and though there are gullies between them of 3 and 4 fathoms, they may, with the skerries, be considered as forming one rocky bank.

The Skertours, $\frac{1}{2}$ a mile to the south-east of Bora holm, is a reef, the weeds of which are visible at low-water springs, and it is then nearly dry; the intermediate channel is $\frac{1}{2}$ of a mile wide with 4 fathoms depth. The marks at the reef are the Ward of Gairsa over Cowsgar cottage N. by W. $\frac{1}{2}$ W., and the cliff at Stromberry Ness on with the hut upon Tainga skerry S. by W. $\frac{1}{4}$ W.; the reef extends $1\frac{1}{2}$ cables to the northward of this position.

Tainga Skerry is S. by E. $\frac{1}{4}$ E. nearly $\frac{3}{4}$ of a mile from Bora holm, and $\frac{1}{4}$ of a mile to the westward of Grass holm; it is a little rocky islet almost destitute of vegetation, with a small hut on it; at high water it is only 40 yards in extent, but at low water its flat shores are uncovered for 2 cables, and it then appears in three masses; the two westernmost, covered at half tide, are generally termed Little Tainga.

There is no navigable channel between the Skertours and Tainga skerry, nor between the latter and Grass holm, both spaces being shallow and foul.

Grass Holm is a small green islet S.E. by S. nearly a mile from Bora holm, and $\frac{1}{2}$ a mile to the westward of Salt Ness in Shapinsha; the north-east point is very foul, and to the southward of it is Broad shoal, a mass of foul ground reaching nearly to Vasa, but separated from it by a channel 5 fathoms deep. A portion of the shoal dries $\frac{1}{4}$ of a mile to the southward of Grass holm, and there are from 10 to 15 feet about it. A *red* buoy is placed on its southern edge at about $\frac{1}{4}$ mile from the holm.

Vasa Skerry and Sound.—Off Vasa point in Shapinsha is Vasa skerry, just covered at high-water springs, but dry for the extent of a cable at low water. Upon the west side of the skerry two small rocks show at low water, but they are not more than $\frac{1}{2}$ a cable from the summit of the larger rock. An iron beacon of open framework 18 feet high, and painted black, stands on the south-western extremity of Vasa skerry.

The channel, one cable in width, between Vasa skerry and the shore of Shapinsha, is named Vasa sound, and is the common route for vessels passing between Kirkwall and the north-eastern isles. The tide runs rapidly through the sound, in which there are 4 fathoms in mid-channel at the narrowest part.

Vasa skerry is the last of the dangers in the line between Gairsa and Shapinsha.

SHAPINSA, NORTH-WEST SIDE.—From Galt Ness (described on pages 136) the north-west side of Shapinsha is low, well-cultivated, and sprinkled with the cottages of the peasantry, among which the slate-roofed house of West hill and a storehouse are conspicuous. Though this side of the island is free of outlying dangers, yet it must not be closed within a fair berth, particularly at Salt Ness, as that point shelves off for some distance. Stromberry Ness, the south-west extremity of the island, is bold close-to.

MAINLAND, NORTH-EAST SIDE.—From the point of Mainland abreast Gairsa, upon the opposite side of the firth, another chain of rocks extends right into the centre of Widefirth, in a direction somewhat parallel to the holms and skerries just described.

Seal Skerry, marked by a beacon 20 feet high, is a rocky patch uncovered at the first hour's ebb, and is at low water a cable in extent in a north and south direction; it lies nearly $\frac{1}{2}$ a mile to the eastward of the manse of Rendal, and at it the pile on Knitchinfield hill, Rowsa, appears midway between the farmhouse and barn of Langskail in Gairsa N. by E. $\frac{3}{4}$ E., and the barrow on Work head in Shapinsha sound on with Stromberry Ness S. by E. $\frac{1}{4}$ E. The east and south sides of the skerry are bold, but it tails off for a short distance to the northward.

The usual passage for vessels to and from Eynhallow sound is between this rock and the holm of Rendal, a flat rocky islet a little to the north-

westward, that is connected at low water with the adjacent shore. The passage is about $\frac{1}{4}$ of a mile wide, and the depth in it is $3\frac{1}{2}$ fathoms.

Little Seal Skerry, which nearly dries at low-water springs, is a small reef towards mid-channel between Gairsa and the holm of Rendal, and lying nearly athwart the channel. The pile on Knitchinfield hill, showing anywhere between the farmhouse and barn of Langskail, N. by E. $\frac{3}{4}$ E., leads across it.

Poldrite, or Poldreet Skerry, is S. by W. $\frac{3}{4}$ W. $1\frac{1}{4}$ miles from Seal skerry, and nearly a mile to the eastward of the farmhouse of Poldreet upon Rendal shore; the cross marks at it are the pile on Knitchinfield hill midway between the farmhouse and barn of Langskail, N. by E. $\frac{3}{4}$ E., and the south part of Hellyar holm a little open of Stromberry Ness S.E. $\frac{3}{4}$ S. (southerly). As this rock is uncovered at one hour's ebb, it is generally to be seen.

A narrow ridge of sand connects the Seal and Poldrite skerries; near the former it has upwards of 3 fathoms upon it, the depth then varies between 12 and 9 feet, and about $\frac{1}{4}$ of a mile from the Poldrite, there is one spot with only 8 feet, and it continues shallow and sandy for $\frac{1}{4}$ of a mile to the southward of the Poldrite.

The general direction of this sandy ridge is parallel to the Rendal shore, the channel between, through which the rate of the stream never exceeds 2 knots, being on the average $\frac{1}{2}$ a mile wide, with 6 fathoms in it, but the bottom is rocky.

Langa and West Skerries are based upon an uneven bank of sand, $\frac{3}{4}$ of a mile square, nearly in the middle of Widefirth. Langa, or Lumma, skerry, is a small patch $\frac{1}{2}$ a cable in extent, dry at low-water springs; but the sea-weed on it may be seen at all times. It is S.E. $\frac{3}{4}$ S. (southerly) $\frac{2}{3}$ of a mile from the Poldrite, and N.W. $\frac{3}{4}$ N. $1\frac{1}{4}$ miles from Stromberry Ness. At it, the west end of Kirkwall cathedral is over the pier lighthouse S. by W. $\frac{3}{4}$ W., and the south part of Hellyar holm a little open of Stromberry Ness S.E. $\frac{3}{4}$ S. (southerly). A red buoy is moored in 4 fathoms upon the east side of Langa skerry, with the pile on Wideford hill over the farmhouse of Quanter Ness, S.W. by W., and Rendal manse in line with Breck house N. by W. $\frac{1}{2}$ W.

The West skerries are $\frac{1}{2}$ of a mile to the westward of Langa skerry, and they also dry at low-water springs. At them the Mull of Deer Ness appears touching Hellyar holm, S.E. $\frac{1}{4}$ S., and the pile on Wideford hill is over the Gazebo on Quanter Ness, S.W. $\frac{1}{2}$ W. To the S.S.W. of the Langa, and to the south-eastward of West skerries, with the Mull of Deer Ness touching Hellyar holm, there is a small sand-bank with 9 feet upon it.

The channels upon either side Langa and West skerries are $\frac{3}{4}$ of a mile wide, with 9 fathoms in them, and in that to the southward, which is

1½ miles wide and 7 to 9 fathoms deep, large vessels may ride throughout the year.

Langa skerry and the other patches about it are the southernmost of the dangers in the body of Widefirth, and the description of the eastern shore of Mainland, in continuation from Eynhallow sound, will now be resumed.

Gors Ness.—Upon a very low green point, which runs off shoal a short distance to the southward of the holm of Rendal, stands the manse of Rendal, and ¼ a mile farther to the southward is Gors Ness, a low bluff clear of reefs.

Apitown Ness, the eastern point of Wald, or Isbuster bay, is a mile to the south-westward of Gors Ness; it is fronted by reefs for the distance of a cable, and ¾ of a mile to the northward, another long reef extends from the shore abreast the farmhouse of Poldreet. A vessel will be well clear to the eastward of both reefs while she has the pile on Knitchinfield hill open of Gors Ness.

Wald Bay.—The south-west portion and head of this bay are very flat and shoal, but the north-eastern side is bold. Anchor in it with Galt Ness on with Apitown Ness, E. by N. ¼ N., in 7 fathoms; here there is plenty of room to get under way, but small vessels may go ½ a mile farther in, and anchor towards the north-eastern shore in 6 fathoms.

Burr Ness, the north-eastern boundary of the bay of Firth, is barely distinguishable from the adjacent shore; it is very flat upon the north-east side, there being only 12 feet at ¼ of a mile from the shore.

BAY of FIRTH.—Between Burr Ness and Quanter Ness is the shallow bay of Firth, now much frequented for cargoes of paving stones. The following holms and skerries are in it.

Cubester Skerries, a reef ½ a mile long, extends out from the western shore of the bay ¾ mile above Burr Ness; as several portions are covered only at high water, the highest being near the outer part of the reef, it may generally be seen. The reef is very flat upon the north-east and south-west sides, but it is bold-to at the outer end, which is nearly midway between Cubester and Damsa holm.

From Cubester skerries, the shore is shallow and clean to the head of the bay.

Grimbuster Holm, upon the south-west side of the bay, is joined at low water to Grimbuster point; the Ner skerry is a long reef projecting from its north side, with as little as 4 feet upon it at 2 cables off. Langa skerry is a small rock within Grimbuster holm, and a little to the eastward of the manse of Firth,

Damsa, a small green islet $\frac{1}{2}$ of a mile long, with a white house on it, is $\frac{1}{4}$ of a mile to the eastward of Grimbuster holm; from its north end a mud-bank of 2 fathoms, having on it a rock of 6 feet, the Midsound Baa, extends nearly across the entrance of the bay of Firth. Between Damsa and Grimbuster holm is a very narrow channel with 8 feet in it.

ANCHORAGES.—There is good anchorage in the bay of Firth for coasting vessels in 4 fathoms between Bur Ness and the skerries of Cubester.

The space between Damsa and the south-east shore of the bay is named Damsa Sound; it has from 4 to 5 fathoms in it over a muddy bottom, and there is very little tide set through it; but as there is as little as 7 feet between Damsa and Ferry point, it is necessary to wait till half-tide before going in. It is an excellent place for vessels to be laid up in during winter. To the southward of Damsa, there is a depth of 15 feet as far up as the manse of Firth.

In the body of the bay of Firth, between the holm of Grimbuster and the western shore, there is an average depth of 4 and 5 fathoms, mud, and the water is always smooth; but, on account of the muddy bank of 12 feet extending nearly across from the north point of Damsa, it is better to wait for half-tide before entering. At the head of the bay there are $2\frac{1}{2}$ fathoms, over mud, 3 cables from the shore; from whence the water shoals rapidly to abreast the kirk, where there are 7 feet.

QUANTER NESS and SKERRY.—Quanter Ness runs off very shoal, and nearly $\frac{1}{2}$ a mile to the northward of it is Quanterness skerry, which is covered at last quarter flood. This skerry is flat on all sides, and, at low water, it dries for $1\frac{1}{2}$ cables, at which time there are $3\frac{1}{2}$ fathoms in the channel between it and the shore. The manse of Firth well open of Ferry point, W. by S. $\frac{1}{2}$ S., leads to the north-west of Quanterness skerry, and the tower of Kirkwall cathedral open of Savrock house S. $\frac{1}{2}$ E., clears its north-east side in $4\frac{3}{4}$ fathoms.

From Quanter Ness to Crow Ness, the north-western point of Kirkwall bay, the shore trends to the south-east, and is comparatively bold.

Scargun.—Off this portion of coast is the Scargun, a small skerry, with 8 feet over it at low-water springs, surrounded by a sand-bank, $\frac{1}{4}$ of a mile across, with 2 to 3 fathoms upon it. At the reef, the west end of the cathedral is on with the high-water mark of Crow Ness, S. $\frac{1}{4}$ W., and the pile on Hellyar holm is in line with the pile on Thieves holm, E. $\frac{3}{4}$ S.

A red buoy is moored on the north-eastern side of the Scargun, in $2\frac{1}{2}$ fathoms, with the beacons on Thieves holm and Hellyar holm in one, and the cathedral $\frac{1}{4}$ point open to the eastward of Crow Ness.

In the wide channel between Severoch and Scargun there are $5\frac{1}{2}$ fathoms, and to sail through it, keep the cathedral midway between Severoch and

Crow Ness, S. $\frac{1}{2}$ E., until the barrow on Hellyar holm appears open to the south-eastward of Thieves holm, E. $\frac{1}{4}$ S. To clear the Scargun passing to the northward, keep the barrow on Hellyar holm open to the northward of Thieves holm ; to pass to the southward of it, the barrow on Hellyar holm must be kept well open to the southward of Thieves holm ; and to clear it passing to the eastward, keep Hadston house open to the southward of Severoch, S.W. $\frac{1}{4}$ W.

KIRKWALL BAY, immediately to the eastward of Crow Ness, is $\frac{1}{2}$ a mile wide and deep, and is open to winds from the northward and north-eastward, but the soundings are regular throughout ; the holding ground is good, as the bottom is a dark tenacious clay, and there is never sufficient sea to cause a vessel to part her cables ; indeed, it is so safe an anchorage, that vessels seeking shelter in the Orkneys from southerly gales should run for it in preference to Deer sound or Inga Ness bay, and the vicinity of the town would enable them to get supplies or a temporary refit, if necessary. As the depths in the bay are not great, large vessels must bring up in $5\frac{1}{2}$ fathoms, mud and sand, with the Gazebo at Quanter Ness open of Severoch N.W. $\frac{1}{4}$ N., and nearer to Crow Ness than the eastern shore, but those of about 12 feet draft and under may go farther in, till the three points, Quanter Ness, Severoch, and Crow Ness, are in line N.N.W. $\frac{1}{2}$ W., and the tower of the cathedral is over the pier lighthouse S. by W. $\frac{3}{4}$ W. ; here there are 3 and 4 fathoms, over sand and mud. Ships of heavy draught should anchor in 7 fathoms, with Balfour castle on with the south extreme of Thieves holm N.E. by E. $\frac{1}{4}$ E., and the lighthouse on the pier head S. by W. $\frac{3}{4}$ W., distant about 9 cables ; as the 6-fathoms space at the upper part of the roads is narrow, it is not advisable to go nearer the town, nor should Balfour castle be opened to the southward of Thieves holm. The best holding ground is upon the western side of the bay.

KIRKWALL, the capital of the Orkneys, is situated at the head of Kirkwall bay ; the principal buildings are the cathedral of St. Magnus, and the United Presbyterian kirk ; the former, a fine massive structure of red sandstone, was founded in 1138 ; the choir has long been used as the parish kirk. Near the cathedral are the remains of the earl's and bishop's palaces. The plaiting of straw for hats and bonnets, which about 30 or 40 years ago employed between 6,000 and 7,000 females, and was the chief manufacture in the islands, is now annihilated ; fishing is still prosecuted with success. Kirkwall, however, derives its principal importance from being the general shipping port for all the islands. Its small harbour, constructed between the years 1812-24, dries nearly throughout at low-water springs ; it has, at the most, accommodation for about 30 sail of

coasting vessels not drawing more than 12 feet. Daily postal communication with the South is maintained *viâ* Thurso.

LIGHT.—A lighthouse stands at the outer extremity of the east pier,—the light, *bright* and *fixed*, is exhibited from August to April only, and greatly facilitates entry into the harbour.

Exports.—Agricultural produce, salted fish, and cattle, are exported in considerable quantities in steamers which ply regularly to Granton and some of the intermediate ports. In 1874 20,000 barrels of herrings and large quantities of dried or pickled fish were exported.

Imports.—The imports are chiefly, coal, lime, salt, and timber.

Trade.—The number of vessels belonging to the port, in 1874, was 40, the tonnage of which amounted to 2,156 tons, and they were worked by 189 men; the arrivals at Kirkwall during the year were, vessels with cargo, 1,269; in ballast, 276: the sailings were, vessels with cargo, 1,170; in ballast, 334. There are vice-consuls resident from France, Prussia, Norway and Sweden, and Denmark.

There is no patent slip at Kirkwall, and small vessels requiring repair have to be beached for the purpose.

Population.—Population in 1871 numbered 3,436.

Water of good quality is obtained either from the wells in the town, or from the numerous rivulets which discharge into the bay. Vessels generally supply themselves from the latter.*

Coal.—English and Scotch coal may always be had for steamers; they are sent alongside in lighters, and in fine weather a vessel may be coaled with considerable despatch.

CAR NESS, the north-eastern point of Kirkwall bay, and at the junction of Shapinsha sound with Widefirth, is flat upon the north side, and should have a berth of $\frac{1}{4}$ of a mile. Opposite a small point on the eastern shore of Kirkwall bay, $\frac{1}{2}$ a mile from Car Ness, a small rock, named Iceland skerry or Clett, lies out a cable from the shore. The prominent house, Ellwick Bank, in Shapinsha, open of Car Ness leads outside it.

Thieves Holm, a small islet one cable over, is upon the north-west side of Car Ness, and the boat channel or sound between them has 12 feet in it at low water. From the north and south ends of the holm reefs extend for $\frac{3}{4}$ of a cable, and it requires care to avoid them.

DIRECTIONS for WIDEFIRTH.—A vessel bound for Kirkwall, either from Eynhallow sound or from the north-eastward between Gairsa and Shapinsha, has in each case the choice of several channels, through which there is little difficulty in making a passage, but it is only with moderate

* There is not a sufficient supply of water for the requirements of more than one or two large ships of war. Mr. G. Marsh, Master, R.N., H.M.S. *Edgar*, 1863.

winds and smooth water, and assisted by a pilot, that a square-rigged vessel should attempt to turn through them.

From Eynhallow sound, the pilotage of the various tracks is as follows :—

Along Rendal shore.—Having arrived between Gairsa and Mainland, keep the pile on Knitchinfield* hill a very little open to the northward of the old barn of Langskail, to clear Little Seal and Seal skerries passing to the westward. Having passed the shoal point on which the manse of Rendal stands, then keep the pile on Knitchinfield hill over mid-channel, or half-way between Rendal manse and the old barn of Langskail, and it will lead past Gors Ness and to the westward of Poldrite skerry, and when the Mull of Deer Ness appears open of Hellyar holm, a course may be shaped towards Kirkwall bay, taking care to avoid the Scargun lying in the track.

Round Langa Skerry.—The channel to the eastward of Seal and Langa skerries is the widest and deepest, and the navigation of it is easily accomplished by those who can recognise the marks.

Being between Gairsa and Mainland, keep the pile on the Ward of Rowsa on with the old barn of Langskail N. $\frac{3}{4}$ W., and it will clear Little Seal skerry on the north-east side, and after Seal skerry † has been passed, and the Hen of Gairsa shows to the eastward of Bora holm, then open the pile on the Ward of Rowsa to the westward of the old barn, so as to clear Bora skerries on their south-west side. The channel between Bora and Poldrite skerries is $\frac{1}{2}$ a mile wide, and between Tainga and Langa skerries 1 mile in width, and the leading mark through the middle of it is the Ward of Rowsa kept midway between Gairsa and the shore of Rendal. If the red buoy upon the Langa is in its place, it will show the position of that rock, otherwise, continue with the last mark on until within $\frac{1}{2}$ a mile of Stromberry Ness, or until the tower of the old kirk in Egilsha appears on with the Hen of Gairsa N.N.E. $\frac{1}{2}$ E., and then shape a course for Kirkwall bay.

Among the rocks and holms between Gairsa and Shapinsha there are three navigable channels, namely, between Bora holm and the Skertours, between Vasa skerry and Broad shoal, and between Vasa skerry and Shapinsha; the latter passage is called Vasa sound. These channels are so disposed that, with the wind from an adverse quarter, a vessel can lie through one or the other of them with the assistance of the weather tide.

Between Bora Holm and the Skertours.—This channel has Bora holm and skerries to the north-westward, and the Skertours and Tainga skerry to the south-eastward.

Proceed close along the Hen of Gairsa as it is bold-to, and when Rendal manse appears open of the south end of Bora holm, bring Howan house in

* Field, properly feld, a hill.

† Marked by a beacon.

Egilsha on with the Hen of Gairsa N.E. $\frac{3}{4}$ N.; this is the leading mark through, and when abreast Tainga skerry bring the cottages of Ross Ness in Gairsa on with the north-east end of Bora holm N. by E. $\frac{1}{2}$ E., to avoid the sandy spit projecting from it, keeping them so until the Ward of Rowsa appears midway between Gairsa and Rendal, when proceed as before directed.

Through the Broad Eddy.—This channel, used when the wind is too scant to admit of sailing through Vasa sound, has Broad shoal to the north-westward, and Vasa skerry to the south-eastward, and is so short that, when the tide is running strong, a vessel can nearly shoot through it into deep water.

Having the Hen of Gairsa open of Grass holm, so as to avoid Broad shoal, bring the south-east angle of the garden wall at Galt cottages over the north angle of a creugh (a walled plot of ground) standing upon the shore of Salt Ness E. by N. $\frac{3}{4}$ N., and it will lead through in not less than 5 fathoms.

The Broad shoal and Scargun buoys should be left on the starboard hand, and Vasa beacon on the port hand, when proceeding to Kirkwall.

Through Vasa Sound.—This channel, having 4 fathoms in it, is the one most commonly used; it has Vasa skerry to the north-westward, and Shapinsha to the south-eastward. Having passed Salt Ness, keep some part of the Hen of Gairsa open of Grass holm until the east end of Kirkwall cathedral touches the cliff of Stromberry Ness, which is the leading mark through.



Kirkwall cathedral touching Stromberry Ness, S.W. $\frac{3}{4}$ S.

CAUTION.—It is necessary to have these objects brought on in good time, for as Vasa skerry lies transversely to the line of channel, the tide sets strongly across the north end of it, and as it also runs rapidly through the channel, which is only a cable wide, the greatest care must be observed in keeping the mark exactly on.

If working towards Kirkwall from the neighbourhood of any of the above channels, it is necessary, when standing to the south-westward, to keep the cathedral open of Crow Ness to avoid the Scargun; and Ellwick bank open of Car Ness to clear Iceland skerry, when standing to the eastward.

TIDES.—Off Swine holm, the flood-stream, passing south of Wyre island, unites with that from Westra firth, but the rate scarcely exceeds 2 knots. In the narrow channels among the group of holms between Gairsa and Shapinsha, the flood sets southerly at the rate of 6 knots.

It is high water, full and change, in Kirkwall roads at 10 h. 9 m.; springs rise 10 feet, neaps $7\frac{1}{2}$ feet.

The main stream from Eynhallow sound passes south of Gairisa, and then transversely to Stromberry Ness and on through Shapinsha sound.

SHAPINSHA SOUND, more commonly known as the String, contained between the south-west side of Shapinsha and the shore of Mainland, is about 4 miles in length, and the breadth varies from 2 miles at the entrance between Haco Ness and Rerwick head, to $\frac{1}{2}$ a mile between Hellyar holm and Work head, the shores being very irregular.

SHAPINSHA, SOUTH-WEST SIDE.—From Haco Ness, described on page 136, the south-west shore of Shapinsha falls back and forms Kirk bay, where an eddy is formed by the flood-stream, in which vessels often keep under way, or they anchor off the kirk, in 10 fathoms. There are no outlying rocks in Kirk bay, but the ledges from Haco Ness should not be made too free with.

Hellyar Holm is a small green islet, with a barrow and pile on its summit, and a ledge, dry at half-tide, connects its north-east end with Shapinsha; the outer sides of the holm are generally bold.

ELLWICK.—Hellyar holm covers in Ellwick, a nearly circular and a secure little bay, with its entrance from the westward, 2 cables wide and $3\frac{1}{2}$ fathoms deep. The harbour is $\frac{1}{2}$ a mile wide, with 7 and 8 fathoms in the centre, over excellent holding ground, and no safer place could be found to lay a vessel up for the winter. The north-east side of Hellyar holm is rather flat, but round the remainder of the bay there are 2 fathoms a cable from the shore. The usual anchorage is rather towards the west side, opposite the village of Balfour, and the small pier harbour below it.

From the north-west point of the entrance to Ellwick, as far as Stromberry Ness, the south-west point of Shapinsha, reefs extend off for nearly a cable, and require a good berth on account of the rapid tide-stream which sweeps past them. A little back from the shore, on a gently rising ground, is Balfour castle, the seat of the proprietor of Shapinsha; the style of architecture, being a combination of that of various periods, gives the building a picturesque appearance, somewhat resembling Abbotsford; it is a conspicuous object from all the sea approaches to Kirkwall.

RERWICK HEAD, upon the opposite side at the entrance to the sound, is low, and a reef extending from it for a cable is nearly always above water and steep-to. Upon the west side of it is what appears to be the ruin of an ancient pier; it shows only at low water, and extends as far out as the end of the reef.

YENSTA BAY.—To the westward of Berwick head the land falls back to the southward, and forms Yensta bay, with its low flat shores. The bottom of the bay is rocky, but vessels sometimes anchor in it in light winds or to wait tide.

YENSTA SKERRY.—Upon the west side of the bay, near Yensta head, is Yensta skerry, a flat rock nearly dry at low water, 2 cables from the shore, and occupying a considerable part of the western angle of the bay. It is out of the way of passing vessels, and those entering Inga Ness bay will avoid it by keeping the red low cliff, Birston head, well open of Yensta head, W. $\frac{1}{4}$ S.

INGANESS BAY,* between Yensta head and Inga Ness, is 2 miles deep, 1 mile wide, and has an average depth of 7 fathoms throughout. The west side of the bay is bold; the east side is flat. As there are no hidden dangers near it, with the exception of Yensta skerry just described, no special directions are necessary for entering it.

Inganess bay is an excellent harbour for vessels of a large class, and frigates could ride in it in safety throughout the year; for though it is open to the north-eastward, any swell from that quarter is intercepted and borne down by the tide-stream setting through the String.† Deer sound, however, is a preferable harbour for coasters and small vessels.

The position for anchorage must be determined by the size of the vessel; those of large draft should go half-way up off the bay of Birston, into 7 fathoms, sand, for here there is plenty of room for getting under way; but in entering the bay for refuge, it is preferable to anchor towards either shore, according as the wind is from the eastward or westward.

From the head of Inga Ness or Holland, which is bold, the coast is further indented by Meal and Car Ness bays, separated from each other by Work head; both bays are small, and should never be preferred to the better anchorages near them. Upon the north-west side of Meal bay is a skerry which is never entirely covered; it will be cleared on the outside by keeping the barrow on Hellyar holm open of Work head.

Work head, on which there is a conspicuous barrow, is bold upon the north side. In Car Ness bay, to the westward, are no detached rocks, but the water shoals suddenly in front of it, and it is not a desirable anchorage.

TIDE.—The tide-stream is narrow in its passage between Work head and Hellyar holm, nor does the String (the core of the stream) expand for some distance past those places; the rate of springs is about 3 knots, and the stream does not turn until $1\frac{1}{4}$ hours after high water on the shore.

* See Admiralty chart, Deer sound and Inganess bay, No. 2,583; scale, $m = 3$ inches.

† Inganess bay is an excellent anchorage for large ships. Fish may be caught with a seine; and supplies from the neighbouring farms and cottages are abundant. Mr. G. Marsh, Master, R.N., H.M.S. *Edgar*, 1863.

The tide inshore near Yensen head sets to the westward with a strong ebb before high water.*

Directions for SHAPINSHA SOUND.—From Berwick head, through Shapinscha sound to Thieves holm is S.W. $\frac{1}{2}$ W. nearly 5 miles, with no running dangers from either shore: but the seaman unacquainted with the sound should keep well off the points. From Thieves holm, the course and distance to the anchorage in Kirkwall bay are S.W. $\frac{1}{2}$ S. $1\frac{1}{2}$ miles.

A vessel writing from the M.L. of Deer Ness towards Shapinscha sound should stand on for across Stronsa frith as to enable her to fetch Haco Ness in order to secure the advantage of the strong ebb-stream setting towards the end of Shapinscha. In standing across towards the south side of the Spring, the rocks at Berwick head and Yensen skerry will be avoided by attending to the directions given on page 157. Kirk bay, upon the opposite side, must not be entered, so as to keep in the strength of the stream.

The south side of Hellyar holm is steep-to, but it is necessary to give Car Ness and Thieves holm a good berth, and in standing towards Langa and West skermes, be careful to tack before the Mull head touches Hellyar holm, but in general the buoy upon Langa skerry will be a sufficient guide for avoiding these rocks.

The shore between Work head and Carmess bay may be closed to nearly half a cable. The extreme south point of Thieves holm touching, but not going in with the extreme of Car Ness, will clear all dangers here.

The south and west sides of Hellyar holm are steep-to. In standing towards Edder castle and Strawberry Ness, a good mark to avoid the steep bank fringing them is not to bring the low point of Berwick head inside the south point of Hellyar holm. The north and west sides of the bank surrounding Thieves holm will be cleared, by keeping the pile of four buildings of Work, which stand conspicuously on the outline within Work head, open of Car Ness.†

CAUTION.—In the narrow part of the Spring, between Hellyar holm and Work head, the rapid tide (sometimes running 4 knots at springs) often raises such a short high sea as to cause a vessel to miss stays. Under such circumstances it is better to wait for moderate weather at an anchorage in one of the neighbouring bays, than to risk the loss of the vessel.

* Captain F. A. Shadwell, H.M.S. *Aboukir*, 1861.

† Mr. G. Marsh, Master, R.N., H.M.S. *Edgar*, 1863.

CHAPTER X.

ORKNEYS.—HOY, HOLM, AND WATER SOUNDS.—SCAPA FLOW, &c.*

VARIATION IN 1876.

Stromness - - 22° 55' W. | Howquoy head - - 22° 40' W.

HOY SOUND.—The western coast of Mainland from the Brough of Birsá southwards is bold-to, nearly direct, and free of outlying dangers at a short distance; thus a vessel will be in safety at a berth of $\frac{1}{2}$ a mile from point to point.

Hoy Mouth, the western entrance to Hoy sound, may be distinguished from considerable distance by the red sandstone cliffs of Hoy head (1,000 feet high), and by the remarkable detached pinnacle rock called the Old Man of Hoy (page 179); it being thus easy of recognition is of great importance, as the much frequented harbour of Stromness is immediately within it.

Hoy sound is included between Brak Ness and Houton head upon the shore of Mainland to the north-eastward, and Hoy and Green heads in Hoy to the south-westward, and the island Gremsa divides it into two channels; Burwick sound, the southern passage, is, however, unfit for ordinary navigation. The general direction of Hoy sound is N.W. by N. and S.E. by S.; it is 7 miles long, and on an average 2 miles wide.

MAINLAND, SOUTH-WEST SIDE.—Black craig, a mile to the northward of Hoy mouth, is, as its name implies, a dark cliff, and is 240 feet high.

BRÁK NESS, or Breck Ness, a low point distinguished by the house of Brackness, is very dangerous, as reefs dry out from it for a cable, and beyond them is the Braga, a detached skerry, 3 cables from the shore at its outer part. On it the sea beats violently.

The ruinous gable of an old kirk, forming a conspicuous sea-mark, stands on a low point a mile to the south-east of Brak Ness, and nearly directly off it are the Kirk rocks, formerly called the holm of Hellyar, a small portion of the mass only just shows at high-water springs, but at

* See Admiralty charts:—Orkney islands, No. 2,180; scale, $m = 0.5$ inches; Scotland, east coast, Sheet V., No. 2,181; scale, $d = 15\frac{1}{4}$ inches; Hoy sound, No. 2,568; scale, $m = 3$ inches; and Long Hope and Widewall harbours, No. 2,581; scale, $m = 3$ inches.

channel. The holding ground within is very good, and the best position for anchoring is abreast the inner holm in $4\frac{1}{2}$ fathoms; but the harbour is often so full of shipping as to resemble a floating dock, and it is necessary to be content with any vacant space that offers; an inner berth, however, is of less consequence, as the whole of the harbour is well protected, and the water is smooth throughout.

It is difficult for a square-rigged vessel to turn into or out of Stromness harbour on account of the narrowness of the channel, but in fine weather it is frequently accomplished with the assistance of a pilot, and by taking advantage of high water for the purpose. Vessels also at times stand in as far as they can fetch, then anchor, and warp in the remainder of the distance.

TIDES.—It is high water, full and change, at Stromness at 9h. 0m.; springs rise 10 feet, neaps $7\frac{1}{2}$ feet.

CAUTION.—If bound out of Hoy mouth, it is necessary in quitting Stromness, to be well clear of the harbour before the ebb makes, or should a calm occur, an anchor must be dropped at once, for the ebb stream sets right over the skerry of Ness at the rate of 6 or 7 knots.

CAIRSTON ROAD, is between Cairston holms, the point of Bue, or Cairston, and Mallow bank, a shoal projecting from the eastern shore. The eastern sides of the holms are flat, with only 18 feet at $2\frac{1}{4}$ cables from the shore; a spit also extends to the south-east from the point of Bue; the latter is cleared by keeping Stromness kirk open of Rom Ness, the point of Mainland upon the east side of Stromness harbour.

Mallow bank is situated between the holms of Cairston and the shore at Clestron, from which it is separated by a narrow channel with 5 fathoms in it. Upon the eastern part of the bank opposite Irland bay, there is as little as 9 feet, but upon the west end there are 16 and 20 feet; it is, therefore, an impediment only to vessels of heavy draft. The whole bank is a soft muddy sand, upon which mallow, or sea grass, grows plentifully.

Cairston road is a summer anchorage for small vessels; and large ones may ride in it at all times, for the rapid tide-stream through Hoy sound. serves to prevent any weight of sea being thrown in. A vessel approaching the anchorage will not have less than 12 feet across the Mallow bank if the hillock of How be not opened to the eastward of the point of Bue; the bank is cleared on its north side by keeping the house at Stromness, called the citadel, open to the northward of the old mill on Cairston holm W.N.W.; and to clear the south-west tail of the bank, keep Stromness kirk open to the southward of the north holm of Cairston. There is no good mark for clearing the bank passing to the southward, where it is very steep, but there is generally sufficient ripple over it to define its limits.

The best anchorage in Cairston road is in 7 or 8 fathoms, with the point of Ness touching the outer extremity of Hoy, W. $\frac{1}{2}$ S., and Stromness kirk over the cottage on the north holm of Cairston, N.W. $\frac{1}{2}$ N.

IRLAND BAY, nearly a mile wide, is a secure anchorage with any wind; it is, however, shoal, and but seldom used; there are no outlying dangers in it, but upon the west side off the point of Bue there are only 10 feet at a cable from the shore. The best berth for small vessels is off the Bue of Cairston in 3 fathoms, mud.

Clestron Skerries are some reefs extending 3 cables from the shore near Clestron storehouse; several portions show at $\frac{1}{4}$ ebb, and at low water they are nearly connected with the shore; the east end of Mallow bank is separated from them by the narrow 5 fathoms channel before alluded to.

There is no good 'thwart mark for these rocks, but their position is generally indicated by the tide. The pitch of Houton head kept open of the intervening land, leads 2 cables outside the skerries, and they have been passed when the mill of Clestron is abreast.

A buoy, properly placed near this danger, would serve both to mark it and the southern side of Mallow bank.

Between the mill of Clestron and Peter skerry, the shore may be closed to a cable.

Peter Skerry is a small reef, (the weeds on which are visible at spring tides,) near the middle of a narrow sand-bank that lies parallel with, and 2 cables from the shore, $\frac{3}{4}$ of a mile to the north-west of Houton head. The west side of the bank is very steep, and to clear it and the skerry, keep some portion of the holm of Houton outside Houton head.

A red buoy lies in $3\frac{1}{4}$ fathoms outside the stream of the north-west end of the shoal, with Orrykirk farmhouse in line with Scaradale farmhouse, E. $\frac{1}{4}$ N.; a farmhouse in Hoy, its apparent length clear of Green head S. by W. $\frac{1}{4}$ W.; Pollixfen's house at Stromness N. by W.; and Houton head S.S.E. $\frac{3}{4}$ E.

Houton Head, at the junction of Hoy sound with Scapa Flow, is a round bold headland and free of danger; but the small bight between it and the holm of Houton is shoal, and must be avoided.

HOY, NORTH-EAST SIDE.—From Hoy head, known to Orkney men as the Kame of Hoy, the cliffs northward decrease in height, and are fronted by reefs, and at the low point of Brebister, a mile from the head, the rocky ledges extend fully 2 cables. To give this part of the coast a good berth, as is usual, it is necessary to keep the house of Clestron open of the point of Oxan in Gremsa.

The Row is a sunken rock with 7 feet upon it, 4 cables to the north of Brebister point, and the water is shoal for 2 cables about it. The mark for this danger is Black craig over the high-water boundary Ness N. by E.

to the eastward of Brebister point, Hoy skerries project from for more than half channel over towards Gremsa; these rocks at ebb, and at low water form three separate patches. Burwick, the unsafe channel between the skerries and Gremsa, is only a cable wide, with 5 fathoms in it.

Burwick, which gives its name to the sound, is a small sandy bay off the kirk and manse of Hoy; its sandy margin dries out for 3 cables, and just beyond it is Quoys bay; here an anchorage is sometimes taken up in summer, with Burwick Bue on with the northern point in 7 fathoms, but the holding ground is not good. The edge of the sand in the bay is generally marked by the discolouration of the water, and it is usual to anchor $\frac{3}{4}$ of a cable outside it to avoid the strength of the tide.

The Fleashes is a narrow sand-bank, $\frac{3}{4}$ of a mile long, nearly in mid-channel between the bay of Quoys and Gremsa; it has from 14 to 16 feet upon it, and its position may generally be distinguished by the lighter colour of the water over it. Brak Ness, open of the west point of Gremsa, clears the shoal passing to the westward, and the house of Clestron well open of Gremsa clears its south-east side.

From the bay of Quoys to Green head, the north-east side of Hoy is free of outlying danger, and may be approached to $\frac{1}{2}$ a cable.

GREMSA.—This island, of an irregular crescent shape, with the concave side to the northward, lies in the middle of Hoy sound, and is surrounded by shoals, which, upon its north-east side, extend off a considerable distance.

LIGHTHOUSES.—Two lighthouses built of stone have been erected on the island, the lights from which were first exhibited on the 15th May 1851. The lower lighthouse, near Oxan point, the north-west extremity of the island, is 20 feet high, and the light is 55 feet above high water; the higher lighthouse stands on the point of Sandside, the north-east extremity of the island; it is 90 feet high, and the light shown from it is 115 feet above high water; they bear from each other respectively S.E. $\frac{3}{4}$ E. and N.W. $\frac{3}{4}$ W., 2,237 yards; in moderately clear weather they may be seen from 11 to 15 miles off.

The high light is *fixed*, and *red* when seen from seaward, but it shows as as a *bright* light in the direction of Strom Ness, or between S.S.E. $\frac{1}{4}$ E. and S.W. by W. $\frac{3}{4}$ W. bearings; it also lights a small arc towards Cava in Scapa Flow, or between the bearings N. $\frac{3}{4}$ W. and N.N.W. $\frac{3}{4}$ W. The

low light is *bright* and *fixed*, and shows between the bearings E. $\frac{1}{4}$ S. and W. $\frac{1}{4}$ N. round northerly. The lights in one lead between the Kirk rocks and the Bow of Hoy, but when a vessel has approached with them on this line so as to be within $\frac{1}{2}$ a mile of the shore, the high light becomes hid by the intervening land, and she must then haul over towards the Strom Ness shore, when the red light will reappear.

Baas of Oxan, the first of the dangers to be described in connexion with Gremsa, is a patch of foul ground off the point of Oxan, with 17 to 20 feet upon it at 3 cables from the shore. The bottom upon the north-west side of Gremsa is also rocky and uneven, and at one spot named the Showbelly, nearly in mid-channel between Oxan point and Strom Ness, there is as little as 20 feet, and several vessels have struck upon it. A short distance to the southward of Showbelly, is another patch with 15 feet upon it; they are the shoaler portions of a rocky spit extending from Gremsa diagonally across the channel.

The skerry of Clett is a rocky patch, which shows at half tide, lying 2 cables out from the north side of Gremsa; the boat channel between has 7 to 9 feet in it.

Ebbing Eddy.—The bay of Sandside, which begins $\frac{1}{4}$ of a mile within the skerry of Clett, is generally foul and shallow; rocks named the Baas extend from the western point for $1\frac{1}{2}$ cables, and appear in detached portions at low water; $2\frac{1}{2}$ cables to the north-eastward of them, with Stromness kirk just over the high-water mark of the point of Ness, is a rock, visible at low springs, named the Ebbing Eddy, which, having to be rounded on the passage through Hoy sound, has brought many vessels up.

A black buoy lies outside the Ebbing Eddy in $4\frac{1}{2}$ fathoms, with the high lighthouse bearing S. by E., and the low lighthouse W. by N.

Long flat reefs dry out 2 cables from the point of Sandside upon the eastern side of the bay, but the shore is then clear for $\frac{1}{2}$ a mile to the southward of the lighthouse.

Sand Eels are detached shoals lying in the channel to the eastward of Gremsa; the lesser Sand Eel is a small ridge with 5 feet upon it, 2 cables to the eastward of the Ebbing Eddy; the greater Sand Eel is $\frac{1}{2}$ a mile to the north-east of the high lighthouse; it has 18 feet upon it, is narrow and steep, and its position is generally indicated by the tide ripple, or by the lighter colour of the water over it. The 'thwart marks at it are Stromness kirk in line with the old mill on Cairston holm, N. by W. $\frac{3}{4}$ W., and the ruined kirk touching the intervening land N.W.

Midcock Shoal is a stony bank having 22 feet upon it, and with another patch of 16 feet near it lying out $\frac{1}{2}$ of a mile from the east side of

Gremsa, with Stromness kirk over the high-water boundary of the west side of the south holm of Cairston N. by W.; the ruined kirk touching high-water mark of Sandside point N.W. by N., and three cottages in Gremsa nearly in line.

A *black* buoy is moored about half a cable to the S.S.E. of the shallowest part of the Riddock shoal in 3 fathoms low-water springs, with the west end of Cairston holm on with Stromness kirk N. by W. $\frac{1}{4}$ W., Old kirk in ruins a little open of Sandside point N.W. by N., and the most southerly house in Gremsa in line with the Wart of Hoy W. $\frac{3}{4}$ S.

Sower Skerry.—The south-east side of Gremsa is very foul, and should not be approached within $\frac{1}{2}$ a mile, for 16 feet may be found at that distance. Two ledges dry out from the shore, the northern of which is named Scarf skerry; the Sower skerry is a detached rock with only 4 feet upon it, lying 4 cables from the shore, and the water is shoal for 2 cables beyond it.

DIRECTIONS for HOY SOUND.—Running.—In clear weather there is no difficulty in recognising Hoy mouth. Hoy hill, upon the south-west side of it, is visible at such times for 40 miles, and on a nearer approach the Old Man of Hoy is too marked a feature to admit of any uncertainty; but in thick weather some caution is necessary, for vessels have been known to run ashore in Skail bay upon the west shore of Mainland, in consequence of having mistaken Row head for Hoy head, though the cliffs of the former are only 180 feet high, while the latter are 1,000 feet.

Having entered Hoy sound, keep in mid-channel, or run in with Gremsa lighthouses in line S.E. $\frac{3}{4}$ E.; on this bearing they lead between Braga skerry and the Kirk rocks to the north-eastward, and the Bow to the south-westward, and when nearly up to Gremsa, or when the manse opens



Old kirk in sight.

to the eastward of the old kirk, haul over towards the Strom Ness shore to avoid the Baas of Oxan, and the Showbelly lying in mid-channel, taking care on closing the ness to keep the ruined kirk in sight, so as to avoid the skerry of Ness, which will have been passed when Stromness kirk appears open of the ness, and then the ruined kirk must be shut in to avoid the Ebbing Eddy and the Sand Eels. Continue on this last course until Stromness kirk appears between the holms of Cairston N.N.W. $\frac{1}{4}$ W. (northerly), the leading mark through the portion of the sound between

Clestron skerries and Gremsa, and when drawing towards Houton head, keep the tail of the holm of Houton in sight, to avoid Peter skerry. From the holm of Houton to Holm sound is S.E. by E., $8\frac{1}{4}$ miles; the Barrel of Butter, S.E. $\frac{3}{4}$ S., $2\frac{1}{4}$ miles, and the Calf of Flota, S.S.E. $\frac{1}{4}$ E., $4\frac{1}{2}$ miles.

At night.—With a vessel not drawing more than 16 feet, should the wind be strong and the tide flowing, proceed in under easy sail with the lights in one S.E. $\frac{1}{4}$ E.; keep them so until the high light (*red*) becomes hid by the intervening land; the Kirk rocks having then been passed, haul to the northward and sight the *red* light again open to the northward of the *bright* one. Endeavour to keep as near to mid-channel as practicable while passing the latter, and when within it, bring it to bear W. by S., and be careful not to haul too far to the northward, on account of the skerry of Ness, from which the *bright* light bears W.S.W. $\frac{3}{4}$ S., nor so far to the southward towards Gremsa as to shut in the *bright* light.

The colour of the high light changes from *red* to *white* on a S.S.E. $\frac{1}{4}$ E. bearing, and when it is S. $\frac{3}{4}$ E., the skerry of Ness, which is the principal danger, has been passed, and the low light must be brought to bear W. by S. $\frac{1}{4}$ S.; this will lead to the anchorage, where a berth may be taken up in 7 fathoms.

Working.—If intending to work through Hoy sound, it will be prudent for a stranger to take a pilot. Many accidents have occurred from vessels not carrying sufficient sail, and missing stays in consequence. As a general rule, the sides of the sound should not be approached closely.

In the accompanying view, Clestron house is that to the left, and Clestron store-house is at the extreme right, and near the water's edge.

Clestron store-house kept open of the shore near Strom Ness clears Braga skerry, and it is advisable not to stand into the bight between the latter and the Kirk rocks, as it is shallow and rocky.



Clestron house.

Clestron storehouse.

Clestron house well open of the shore next Strom Ness clears the Kirk rocks.

Clestron house kept open of Gremsa clears the Bow of Hoy, and the foul ground about it.

Near the point of Oxan, which is foul, go about before the lighthouses appear in line, or tack before the point of Sandside is shut in. A vessel drawing 16 feet may cross Showbelly in safety, and stand to within a cable of the Strom Ness shore.

The Kame of Hoy kept open of the point of Oxan clears the skerry of Clett, and the ruined kirk kept in sight (see view, page 165) leads outside the skerry of Ness. The latter danger will have been passed on Stromness kirk appearing open of the point of Ness; when, should the vessel be bound to Stromness, she must keep to the eastward of the buoy near the entrance, and sail up in mid-channel to a berth. If intending to anchor in Cairston road, the extremity of Hoy must be kept a little open of the point of Ness, W. $\frac{1}{2}$ S., and it will lead clear of Mallow bank and to the anchorage. For the best position, see page 161.

To proceed through the remainder of the sound towards Scapa Flow, and standing to the southward towards the Ebbing Eddy, tack directly the ruined kirk appears in sight in order to clear that rock, and also the lesser Sand Eel by 2 cables; and in standing towards Mallow bank, keep Farafeld house open to the south-west of the old mill on the holm of Cairston.

A vessel not drawing more than 12 feet need pay no attention to the Greater Sand Eel and Riddock shoal, but one of heavier draft must keep Stromness kirk open to the eastward of the old mill to clear the former, and tack with the same objects on to clear the latter.

Houton head kept open of the intervening land clears Clestron skerries, and they will have been passed when the mill of Clestron appears under the barrow on the southernmost summit of the Ward of Orfer E. $\frac{1}{4}$ S. The shore is then clear to Peter skerry, which is marked by a *red* buoy, and should be passed on the outside; but any part of the holm of Houton kept open of the head will clear the rock should the buoy be out of place.

The south-east end of Gremsa has been already described as very foul; it is therefore necessary when near it to go about before Stromness kirk becomes shut in upon Gremsa, and to attend to this mark until the white house behind Clestron shows on with the mill of Clestron; the Sower and Scarf skerries will then have been passed, and the vessel may stand across to Hoy, if necessary, as the sound is free of danger.

CAUTION.—After westerly gales there is a bad roost in Hoy mouth with the ebb tide, and it is then dangerous to attempt to pass out of it, especially if the wind be light.

Burwick sound is also a dangerous place, for the tide stream sets rapidly through it and over Hoy skerries, but in an emergency a vessel may sail through it with a fresh fair wind by keeping within $\frac{1}{2}$ a cable of the shore of Gremsa.

TIDES.—The flood stream, running through Hoy sound, begins on the north side at the Millstone quarry, 4 miles from Hoy mouth, and on the south side from Hoy head. The in-draft is scarcely felt 5 miles outside the entrance.

In Hoy sound the rate of the stream is 4 knots, until it divides upon Gremsa, when the rate increases to 6 knots, one stream passing through Burwick sound, the other between Gremsa and Strom Ness. The stream goes over the skerry of Ness, and from thence sets fair for the skerries of Clestron, where it divides, one stream turning inwards and filling Irland bay, and at half-flood setting as a back tide out of Cairston road, the other setting rather off shore at first and then towards Houton head. From Burwick sound the stream sets along the shore of Hoy to Green head, the rate being scarcely 3 knots, and Gremsa creates still water over a large space in the middle of the sound. It is high water, full and change, at Stromness, at 9h.

HOLM SOUND, bordered by Holm parish at the south-east extremity of Mainland to the north-east, and by the island of Burra to the south-west, is divided into three channels by Lamb and Glims holms; the northernmost of these passages, called Kirk sound, is the safest and best.

MAINLAND, SOUTH-EAST SIDE.—Rose Ness, the north-east point of the entrance to Holm sound, is low and devoid of any remarkable feature; some object by which it might be identified should therefore be erected upon it; at present there is only a pile of stones on a barrow upon the east side of the ness. To the westward, the land falls into a shallow bay towards the manse; here, though the bottom is rocky, vessels may stop a tide in 4 or 5 fathoms by anchoring just within the stream of the ness.

Cubsey is a small rock, dry at low-water springs, lying directly abreast the manse, and about 2 cables from the shore. A *red* buoy is placed outside it in $3\frac{1}{2}$ fathoms, with the east end of Northfield farmhouse W. $\frac{1}{2}$ N., Glims holm skerry beacon W.N.W. $\frac{1}{4}$ N., the secession kirk in Holm in line with the east end of Vigo farmhouse N. $\frac{3}{4}$ E., west end of Holm manse E. $\frac{3}{4}$ N., and Rose Ness S.S.E.

Between the manse and the kirk the shore is flat and shallow, and from the latter to Skeldoquoy, though the coast is clear, it must not be made too free with. Off Græms hall, coasters occasionally anchor in from 2 to 3 fathoms, over sand and rock; and off the hamlet of St. Mary, upon the east side of the point of Skeldoquoy, there is tolerable summer anchorage for small craft, as they can lie out of the stream of tide in from 2 to 4 fathoms, over sandy patches, but the ground is loose, except very close in-shore.

The point of Skeldoquoy is flat upon all sides, and dries out for $1\frac{1}{2}$ cables; but Howquoy head, the turning point into Scapa Flow, is bold.

Between Skeldoquoy and Lamb holm is the shoalest portion of the sound; in mid-channel there is a depth of $3\frac{1}{2}$ fathoms, and $4\frac{1}{2}$ fathoms near Lamb holm.

Lamb Holm.—The west and north sides of Lamb holm (pronounced Lamon) are bold, and the beach at the north-west point is steep-to. A small rocky shoal, called the Knoll, having 10 feet upon it, and 3 fathoms within it, lies out nearly 2 cables from the eastern end of the island; at it Græms hall bears N. by W. $\frac{1}{2}$ W., Holm kirk N.E. by E. (easterly), Rose Ness S.S.E. $\frac{3}{4}$ E., and Northfield S.W. $\frac{1}{4}$ W.

The south and south-east sides of the holm are clear, and there are 6 and 7 fathoms close to the rocks at the south-west point.

The narrow passage between Lamb and Glims holms is named Skerry sound; there are 6 fathoms in it, but the rapidity of the tide-stream through it, and the sunken rocks about it, render it dangerous.

Glims Holm.—The north side of this holm is clear but rather flat; the east end is very foul for $\frac{1}{2}$ a mile, and reefs dry out at low water for more than $\frac{1}{2}$ a cable, beyond which is the skerry of Glims holm, separated from the islet by a boat passage. On a portion of this rock, which is uncovered at low water, stands a beacon, consisting of a pyramid of iron pillars, supporting a cylindrical open cage; the whole being 40 feet in height, and painted red.



Glimsholm skerry beacon.

The outer point of the skerry is about $1\frac{1}{2}$ cables beyond the beacon.

Sinclair Skerry, 2 cables E.S.E. from Glims holm skerry, is 2 cables in extent in an east and west direction, with from 4 to 7 feet over it. For $1\frac{1}{2}$ cables to the eastward of this skerry, and in the narrow channel separating it from Glims holm skerry, there is a depth only of from 2 to 3 fathoms. From Sinclair skerry, Holm southernmost kirk bears E. $\frac{1}{4}$ N., Rose Ness cairn S.E. by E. (southerly), and Northfield house S.W. $\frac{3}{4}$ S. As this danger is greatly in the way of vessels passing through Skerry sound, or working into or out of Kirk sound, it should be marked by a buoy.

BURRA,—NORTH-EAST and NORTH-WEST SIDES.—Burra Ness, the east point of this island, and the south-west point of the entrance into Holm sound, is low, and fronted by reefs extending for a cable. In the bay to the northward of the ness there is good anchorage with off-shore winds, the best position being in the southern portion of it, $\frac{1}{2}$ of a mile from the shore; the bottom is rocky, with patches of sand over it, and the general depth is from 6 to 7 fathoms.

The north-east point of Burra, near Northfield, must have a good berth, and all the northern shore of the island is foul, but it is out of the track of shipping. The narrow sound between Burra and Glims holm is foul, the weeds appearing at low-water springs nearly all the way across. A channel of 2 to 3 fathoms may, however, be found by keeping nearer to Glims holm than to Burra.

From the point of Warebanks, opposite Glims holm, the coast of Burra westward is clear to the Hope of Hunda. Southward of Warebanks is the broad bay Echnalock, in which there is good anchorage with the wind off-shore in 10 to 7 fathoms.

Hope of Hunda, or Hunda Sound, is the small bay formed by the north-west side of Burra, the north-east end of Hunda, and the narrow stony isthmus connecting the two islands. The Hope is an excellent harbour for small craft in all winds; it is rather more than $\frac{1}{2}$ a mile deep and 3 cables across; the depths are from 4 to 6 fathoms, and the shores are clear and not very flat. The best anchorage is about half-way up, in 4 fathoms, sand.

Hunda is about a mile in length, and the whole of its west side is very bold.

DIRECTIONS for HOLM SOUND.—CAUTION.—It has been remarked on page 92 that vessels have, in thick weather, often mistaken the bay of Sandisend for Holm sound; but Rose Ness, at the entrance of the latter, may readily be distinguished from the points of the misleading bay, as well as from Burra Ness and Grim Ness, for off it the Horse of Copinsha shows over the tail of Ward holm (see view, page 92). Also a house (Cara store) appears to be standing in the middle of the passage through Water sound, whereas from its winding character, no passage can be seen through Holm sound. The beacon also on Glims holm skerry will, in moderately clear weather, serve to distinguish the latter sound.

Holm sound is only fit for square-rigged vessels to turn through under favourable circumstances. With strong southerly winds and a flood tide the passage is decidedly unsafe, for the sea then breaks nearly across the entrance, and even with strong winds from the westward, and an ebb tide, so much sea is raised as often to cause a fore-and-aft vessel to miss stays; but in fine weather a square-rigged vessel may either turn or back and fill through the narrows with safety.

Running.—To sail through Kirk sound, the northernmost of the channels of Holm sound, (in which, owing to its semicircular form, the course varies 8 points,) after Rose Ness, which is bold, has been passed, steer for the north-east point of Lamb holm or for Græms hall, until the kirk upon the shore has been passed, keeping outside or to the south-west

of the Cubsey buoy. Then steer more northerly to avoid the Knoll, and when Skeldoquoy point appears open of Lamb holm, gradually alter the course westerly and south-westerly, and continue through the remainder of the sound in mid-channel, giving a wide berth to Skeldoquoy point. The tide stream in Holm sound is so rapid that, with a fair wind, a vessel will be quickly through, but it should not be attempted with a scant wind and adverse tide, for she would then be exposed to the danger of falling to leeward upon the flat shore of Holm.

Working.—In turning through Holm sound, as the tail of Sinclair skerry is on the line of the north-east points of Burra and Lamb holm, keep considerably without the stream of the points. Græms hall, on with the north-east point of Lamb holm, leads 3 cables to the eastward of the skerry. The south side of the Knoll will be cleared by keeping any part of Glims holm open of Lamb holm, and on the north side by keeping Skeldoquoy point open to the northward of Lamb holm. As the navigable channel of Kirk sound is at one part only 2 cables across, it is scarcely wide enough for square-rigged vessels to beat through.

Should a vessel be off the western entrance to Holm sound in a calm, and the flood-stream running, she will, by towing to the northward of mid-channel, drift through Kirk sound and clear of the Knoll, as it lies within the edge of the eddy; but should the vessel be drifted towards Skerry sound, she must then keep as near as practicable to Lamb holm, to avoid being set upon Sinclair skerry.

The bays on either side of Burra are well adapted for anchorage, when having to wait for a fair wind through Holm sound.

The passage through Skerry sound is very narrow, with Sinclair skerry in the middle of the approach, and it should only be used under the most favourable circumstances. From Rose Ness steer for the middle of Lamb holm until close to that islet; then run along its southern side within $\frac{3}{4}$ of a cable of the shore, and haul close round its south-western point.

This channel may be easily sailed through when approaching from the westward with a fair wind and tide; under such circumstances, steer for and haul close round the south-west point of Lamb holm; then steer for Holm kirk until outside the line of the north-east points of Lamb holm and Burra, or until Græms hall shows open of Lamb holm, when Sinclair skerry will have been passed, and the remainder of the passage is clear of danger.

TIDE.—Off Holm sound the stream of flood drains along shore to Halcro head, where it meets the stream from Pentland firth. Through Holm sound the rate of the flood-stream is 6 knots where strongest, and it turns at one hour after high water on the shore.

WATER SOUND, between the south side of Burra and the north side of South Ronaldsha, is about $3\frac{1}{2}$ miles long and nearly $\frac{1}{2}$ a mile wide. The navigable channel is too shallow and narrow to be available for general use; it is, however, well adapted for coasters and small craft, who pass into the small but very secure harbour St. Margarets Hope, upon the southern side of the sound.

LIPPA.—The north-east side of the eastern entrance to Water sound is somewhat flat, and at the mouth there is as little as 12 feet for more than half-way across. Farther in is a rock named the Lippa, nearly dry at low-water springs, lying nearly in the middle of the sound, with the high-water mark of Burra a little open of the high-water mark of Cara point. There are 3 and 4 fathoms water close to the south side of the rock, and foul ground with 6 to 9 feet over it, connects it with the northern shore. Westward of the Lippa, the shore of Burra to abreast Cara point is foul, and there are about 12 feet for one-third the distance across the sound.

Upon the southern side of the sound rocks dry off from the shore for a cable to the point of Cara, which is a shingle beach with a prominent storehouse upon it. The point is foul to the eastward, but steep on its north side, while under it to the westward is good summer anchorage in $3\frac{1}{2}$ fathoms, sand; usually occupied by a fleet of schooners and sloops during the fishing season.

Three-quarters of a mile to the westward of Cara point, a rocky flat, named the Taing of Knockhall, projects from the shore for 2 cables, and continues round the east point of St. Margarets Hope to abreast Knockhall. Nearly opposite, but a little outside the line of Needle point, the western boundary of the entrance to the Hope, are some detached rocks, named the Skua-flaas, which dry at low water.

The remainder of the coast of South Ronaldsha, as far as Hoxa head, is clear, and in the bay of Hoxa there is fair anchorage in 7 fathoms, sand, about $\frac{1}{2}$ a mile from the shore.

In the middle of the western entrance to Water sound, and nearly in the line of the Needle head and the western point of Hunda, is a sand-bank with 10 feet over it at low water; it is very steep upon the south side, and clearly marked by the colour of the water. Small vessels often use this bank for temporary anchorage.

DIRECTIONS.—Vessels waiting the change of tide can anchor upon the north side of Grim Ness in 7 fathoms, sand; this is a good temporary anchorage with off-shore winds, and should the wind shift suddenly, Water sound may be run through.

The leading mark through the eastern entrance to Water sound, to within $4\frac{1}{2}$ cables of Cara point, is the high-water mark of Burra touching the high-water mark of Cara point, N.W. $\frac{3}{4}$ W.; this leads clear of the

Lippa; then proceed in mid-channel, and avoid the Taing of Knockhall by keeping Crowtaing point open of Needle head, and when abreast of Hunda, the sound will have been cleared.

TIDE.—The rate of the flood-stream through Water sound is 4 knots per hour.

ST. MARGARETS HOPE.—In this small but secure natural basin, there is good anchorage in 3 to 4 fathoms, rather towards the western shore. The head of the hope, which is skirted by a village, is rather flat. A spit of stones, extending from the west point of the entrance, protects the hope in winds from the northward; this spit dries at $\frac{1}{4}$ ebb, its north side is flat, but there are 15 feet at low water close to the outer end, which is named Needle point, and is marked by a pole beacon.

The entrance between Needle point and the Skua-flaas is extremely narrow; the mark for leading through it is the Secession manse, over a small house upon the shore, near the East burn, S.S.E. $\frac{1}{4}$ E.

SCAPA FLOW is a small inland sea, enclosed by Mainland to the north-east and north, Hoy westward, Flota and South Ronaldsha to the south, and by Burra upon the south-east side. It has an area of 50 square miles; the average depth does not exceed 20 fathoms, over a muddy bottom, and round its margin are many good harbours and roadsteads for small vessels; there being also but little tide-stream over it, and no sea except that caused by the fetch from side to side, it would seem to be remarkably well adapted for a rendezvous for a fleet. Any number of line-of-battle ships might be anchored upon the north side of Flota in from 16 to 18 fathoms, mud, where they would be secure in all winds, and with a sea outlet always at command. There is also good anchorage for large vessels in the western entrance to Water sound in 10 to 12 fathoms, sand, where was formerly the rendezvous for Greenland whalers. Frigates might anchor upon the north side of Burra, in Pan Hope, in Long Hope, and in the sound between Flota and Hoy, while smaller vessels would have land-locked harbours in Risa sound, the Hope of Hunda, and in Houton cove.

Water.—A large supply of water may be obtained at all times of the year from the burns of Hoy and Orfer.

There are comparatively few dangers in Scapa Flow, and the navigation is consequently extremely simple. The whole of the northern shore is low and indented by small bays, but there are no dangers beyond the stream of the points. The following is a brief description of the more prominent features.

HOUTON COVE is formed under the protection of the small flat holm of Houton, upon the south-east side of, and connected with Houton head by

a reef which dries at low water. It is almost circular, and though devoid of wood, is picturesque; it is protected from all winds, and is well adapted for the use of small fore-and-aft vessels; the breadth across is about 3 cables, and there is a depth of 18 feet in the centre, over a bottom of clean sand.

The entrance to the eastward of the holm is about $1\frac{1}{2}$ cables across, and there is never a less depth than 12 feet in the channel, which is confined to close along the holm by the shoal point upon the north-east side of the entrance. A small beacon of piled stones on Houton head kept over the hut upon the holm N.W. $\frac{3}{4}$ W., leads obliquely to the deepest water in the entrance.

In Kirk bay, a mile to the eastward of Houton cove, vessels may anchor in off-shore winds in 12 fathoms, mud.

SMOOGRA BAY, or Swanbuster bay, is formed between Toy Ness and Ve Ness; from the former, Toy Ness reef projects out for $2\frac{1}{2}$ cables in a direction parallel to the coast; this is cleared passing to the southward by keeping the holm of Houton in sight, and to the eastward by keeping a road leading down from Gyre house to the shore, end on. Smoogra skerry, drying at low-water springs, is upon the north-east side of the bay, abreast Gyre house, and is connected with a shoal which occupies the whole of the eastern portion of the bay; both dangers will be cleared on their south side by keeping the house of Gatneap open of Ve Ness. Ve Ness also is fronted by a reef projecting for a cable, but any part of the holm of Houton kept in sight leads outside it.

Smoogra bay affords good summer anchorage under Toy Ness reef, the best position being with Swanbuster on with a hillock upon the shore, N.N.W. $\frac{3}{4}$ W., in 6 fathoms, good holding ground.

The small narrow bay of Walkmill upon the east side of Ve Ness, dries for nearly half its extent, and offers no shelter for anchorage.

SCAPA BAY, the southern port of Kirkwall, from which it is distant a mile, is 3 miles from Ve Ness, and the intermediate coast is clear and bold, with depths of from 10 to 12 fathoms close to the rocks. Scapa bay is a mile deep, and nearly $\frac{3}{4}$ of a mile wide; but Scapa skerry, or the reef of Dike-ends, showing at low-water springs, lies nearly in the middle of it. The passage to the westward of the skerry has 12 feet water in the deepest part, but it is only fit for small vessels. The skerry is bold-to upon the south and east sides, and the channel between it and the shore at Gatneap is $\frac{1}{2}$ a mile wide, with 7 fathoms in it; within, the depths decrease gradually towards the head of the bay, which is skirted at low water by a dry sand, $\frac{3}{4}$ of a cable broad. The whole of the eastern portion of the bay is clear, but upon the western side within the skerry, it is shoal.

To proceed into Scapa bay from the westward, keep Toy Ness open of the western shore of the bay until Kirkwall cathedral appears open its own



Kirkwall cathedral open of Nether Scapa,
N.E. $\frac{1}{4}$ N. (easterly).

length to the eastward of Nether Scapa, N.E. $\frac{1}{4}$ N. (easterly), which kept so, will lead clear of Scapa skerry and to the anchorage, where there are 5 or 6 fathoms, good holding ground ;

small vessels having passed the skerry, may round it to the westward, and obtain the shelter of the skerry.

From Scapa bay, the coast trends to the southward, and is bold and free from danger to Howquoy head.

BARREL of BUTTER, or Carlin skerry, is a small rock nearly in the middle of the western end of Scapa Flow, it is almost covered at high-water springs, but at low water it dries for $1\frac{1}{2}$ cables in a north-west and south-east direction. A plain stone beacon, surmounted by an iron cage, has been erected upon it. This rock must not be approached too closely,



Barrel of Butter beacon.

particularly towards high water, and as it is difficult to distinguish the beacon at night, it is usual to keep either towards the shore of Mainland or Cava. From the beacon, Houton head bears N.W. $\frac{3}{4}$ N., $2\frac{1}{2}$ miles ; north end of Cava W.N.W. $\frac{1}{2}$ W., $1\frac{1}{2}$ miles ; Calf of Flota S. by E. $\frac{1}{4}$ E., $2\frac{3}{4}$ miles ; and Howquoy head E.S.E., 6 miles.

CAVA is a small island of a triangular shape, a mile long and nearly $\frac{1}{2}$ a mile broad at the base or south end, lying a mile to the eastward of Green head in Hoy, and the same distance to the northward of Fara ; its northern end, which is nearly detached, is named the Calf of Hoy. Except at the south-west point, where a sandy spit with 16 feet upon it runs out for more than 2 cables, the island may be closed to half that distance at every part.

RISA, sometimes called Little Risa, is a small islet near the shore of Hoy, $\frac{1}{2}$ a mile to the south-eastward of Green head ; its east and west sides are bold, but a sandy spit stretches from its south-west side one-third the distance across the channel between it and Hoy.

Upon the shore of Hoy abreast Lyrwa bay between Green and Pegal heads, is a good anchorage with excellent holding ground, though it is somewhat exposed. As the depths decrease suddenly towards the head of the bay, the best berth is just within the line of the points in 12 fathoms, mud.

RISA SOUND.—The space between the islet of Risa and the shore of Hoy abreast is an excellent harbour, sheltered from all winds, and capable

of accommodating vessels of 400 and 500 tons burden. On the south side of Pegal head is a small bay, the whole of which, as far out as the stream of Pegal head, is occupied by a sand-bank, the water upon which deepens suddenly from 9 feet to 7 and 8 fathoms. Pegal burn, to the southward of the head, is a good watering-place. Off Risa house in Hoy, the southern part of the sound, a shallow spit, having 8 and 10 feet upon it, extends towards Little Risa, and overlaps the spit from that islet; the 2-fathoms channel between them is very narrow, intricate, and only fit for small vessels. The best anchorage in Risa sound is in mid-channel, a little to the southward of Pegal head, in 8 fathoms, mud.

Gutter Sound, the channel between Risa and Fara, is $\frac{1}{2}$ a mile wide, and clear of danger; there is a depth of 10 fathoms in mid-channel, and the tide-streams through it are not strong.

FARA on its west and north sides is clear, but abreast the middle of the east side of the island a flat stretches off for 3 cables, with 2 and 3 fathoms upon it. Small vessels may use it as a temporary anchoring place, but large vessels will avoid it by keeping any part of the north-east coast of Hoy open of the north end of Fara.

Weddel Sound, separating the islands Fara and Flota, is 2 cables broad, and where narrowest has from 4 to 5 fathoms depth, but a sand-bank with 15 to 18 feet upon it fills up the western entrance. The best water is on the north side of the channel, as the shore of Flota is flat, but the deepest water in the western entrance is upon the south side, the south-east side of Fara being shoal. There is good summer anchorage in any part of this sound in from 3 to 8 fathoms, and the tide-stream through it is moderate.

FLOTA is irregular in form, and larger than the island last described. The north side is clean and bold to Rone head, abreast which is the Calf of Flota, a very small islet, steep-to on its east side. The east side of Flota, from Quoy Ness to Stangar head, must not be made free with, but the latter point is steep-to.

Pan Hope, a large bay on the east side of Flota between Rone head and Quoy Ness, is a mile deep and nearly $\frac{1}{2}$ a mile wide, but the upper half is occupied by a flat sand, having 7 to 10 feet over it. Pan Hope is open to easterly winds, but it is a good summer anchorage. As the water shoals immediately within the entrance, it is necessary to anchor before **Hoxa** head appears on with Quoy Ness, and rather nearer to the southern than to the northern shore, in 4 or 5 fathoms, sand. Small vessels may go farther in and anchor off the post office in 2 and 3 fathoms. The shores on both sides are clear but flat.

All the anchorages around Scapa Flow have been described, and no other remarks are necessary, for the navigation over the body of the Flow is simple, and the various courses and distances will be obtained from the chart.

TIDE.—In Scapa Flow the streams of flood become diffused, but their general direction is towards Holm and Hoxa sounds. At the Barrel of Butter the rate of springs scarcely exceeds 2 knots. Near the points, the rate of the streams is slightly accelerated; something may, therefore, be gained by standing towards them, should the tide be favourable.

HOXA SOUND, having Flota to the west, and South Ronaldsha and Hunda to the eastward, is a broad and deep channel, which may be used by the largest vessels. Both Hoxa head and Hunda are bold and clear; the breadth of the channel between Stangar and Hoxa heads is nearly $1\frac{1}{2}$ miles, and between Rone head and Hunda $2\frac{1}{4}$ miles, and the general depth is from 20 to 30 fathoms, but the sound is obstructed by the following dangers:—

Neva Skerry, or Navir holm, is a small rock awash at high-water springs, lying E.S.E. $\frac{1}{4}$ S. $\frac{2}{3}$ of a mile from Rone head; there is a depth of 10 fathoms within $\frac{1}{2}$ a cable of its west and south sides, but the north side is rather foul, and must not be approached so closely. The skerry is marked by a cone of plate iron, 32 feet high, terminating in a pointed cornice, and painted *black*.



Neva skerry beacon.

The Grinds, the other danger, consists of some patches of rock lying in a north-east and south-west direction upon a sand-bank E. by N. $\frac{1}{4}$ N., $\frac{2}{3}$ of a mile from Neva skerry beacon; the least depth over them is 6 feet, but at low water the weeds are visible. The bank is nearly $\frac{1}{2}$ a mile long, and is steep on its north and south sides. A chequered *black* and *white* buoy lies in 5 fathoms just to the north-east of the Grinds, with Warebanks cottages in Burra in line with the high-water mark of the north side of Hunda, E. $\frac{3}{4}$ S.; west end of Laughton's house in line with the east end of Park cottage, S.E. $\frac{1}{4}$ E.; Hoxa head S.W. $\frac{3}{4}$ W.; Neva skerry beacon W. $\frac{3}{4}$ S., and south edge of the cliffs at Rone head W. $\frac{1}{2}$ N.

DIRECTIONS.—The usual passage through Hoxa sound is to the westward of Neva skerry, and it was usual formerly, to keep Barth head open of Hoxa head to avoid the rock, but now the beacon upon the latter sufficiently marks it.

Swona, shut in by Hoxa head, clears the Grinds passing to the eastward; the same island, quite open of the head, clears them passing to the westward; Glims holm touching Hunda leads to the southward, and Cara

storehouse shut in by the south-west end of Hunda, to the north-eastward of them.

TIDES.—The flood-stream sets transversely across Hoxa sound from Stangar head to Hoxa head and Hunda, at which time there is almost still water, or a very weak southerly stream, on the east side of Flota.

The ebb-stream sets to the southward through Hoxa sound, but not so strongly as to prevent a vessel working against it with a moderate breeze. Turning through the sound with the flood, the strongest stream will be secured by passing to the southward and eastward of the Grinds.

CHAPTER XI.

ORKNEYS.—SOUTHERN COAST.*

VARIATION IN 1876.

Turn Ness - - - 22° 55' W. | Brough Ness - - - 22° 40' W.

TURN NESS, the south-east point of Hoy, is low and flat, with some low-water rocks extending from it for $\frac{1}{2}$ a cable; while $\frac{1}{3}$ of a mile off there are 14 fathoms.



Old Man of Hoy.

Berry Head, N. by E. $\frac{3}{4}$ E., 2 $\frac{1}{2}$ miles.

From this, as a turning point, the west coast of Hoy extends to the northward, and is composed of cliffs, attaining in that of Berry head, which is of a deep red colour, an elevation of 555 feet. Six miles farther to the northward is a fine detached pinnacled rock, named the Old Man of Hoy, higher than the cliffs abreast, and showing over the land from the southward.

Proceeding eastward from Turn Ness, a small bay occurs between it and Brims Ness, which is low and rugged, with some rocks lying out from it for $\frac{1}{2}$ a cable: this point should not be made too free with, as the tide-stream runs past it very rapidly, often causing a high sea. The head of the bay is distinguished by a sandy patch, and near it is the old house of Melsetter with its excellent gardens.

Aith Hope is between the eastern side of Brims Ness and the south-west side of South Walls, and in this deep narrow bay, or inlet, vessels anchor in northerly winds in 5 or 6 fathoms; but as it is open to the south-east,

* A description of the Pentland firth and its tidal streams is given in the North Sea Pilot, Part II., Chapter II., North Coast of Scotland, and accordingly the southern coast of the Orkneys from Turn Ness to Old head, forming the northern boundary of the firth, will only be noticed here.

See Admiralty charts:—Orkney islands, No. 2,180; scale, $m=0.5$ inches; Scotland, east coast, Sheet V., No. 2,181; scale, $d=15\frac{1}{2}$ inches; and Long Hope and Widewall harbours, No. 2,581; scale, $m=3$ inches.

it can scarcely be considered secure. The head of the bay is formed by a low narrow gravelly ridge, connecting South Walls with Hoy, flowed over at high spring tides.

CANTICK HEAD, 3 miles from Brims Ness, is the eastern extremity of the south shore of South Walls, and is composed of cliffs of a moderate height. The head is rather low and round, ending in an abrupt cliff to the southward. It is bold-to on the south side, but low-water rocks extend from it in an easterly direction for a cable. To avoid them, keep the Mortella tower on Crock Ness open of Hack Ness N. by W. $\frac{1}{4}$ W., and when Stangar head is just open to the northward of Switha E. by N. $\frac{1}{4}$ N., the outer part is immediately abreast. Full allowance must be made at high water for the extent to which these rocks project, as the distance is apt to be under estimated, and the ebb from Long Hope, and the channels near, sets directly over them. Immediately within the head is the deep bay of Kirk Hope, where vessels bound to Long Hope occasionally anchor for a tide should the ebb have commenced.

LIGHT.—The lighthouse on Cantick head, the S.E. extremity of South Walls, Hoy island, is built of white bricks, and shows, at an elevation of 115 feet above high water, a *white* light, *revolving* once every minute; in clear weather it should be visible from a distance of 15 miles.

Switha is a narrow islet, $\frac{1}{2}$ a mile long, from 50 to 60 feet high, and steep-to on all sides. The flood stream passing it sets directly upon Hoxa head.

LONG HOPE, a secure anchorage, and one much frequented by vessels navigating the Pentland firth, is a deep inlet running in a westerly direction for $3\frac{1}{2}$ miles between South Walls and the south coast of Hoy. The entrance is easily distinguished by the Mortella towers standing on the points upon either side. These towers were erected during the latter part of last continental war, to protect the vessels here waiting convoy from the numerous privateers that hovered about.

Crock Ness, the northern point of the entrance, has a reef named Crockness Taing, extending from it to the eastward, at the outer end of which is a *black* buoy in 3 fathoms. Wideford hill, in Mainland, open of the eastern end of Fara island, or the highest part of Swona kept open of Hack Ness, clears Crockness Taing, passing to the eastward, and Northness house (Long Hope) in one with Melsetter farm leads to the southward of it. At $1\frac{1}{2}$ miles within the Mortella towers, the Hope, at first a mile wide, is narrowed by projecting points from either shore, named the North and South nesses, to $\frac{1}{4}$ of a mile; it afterwards widens, and forms an inner basin, but, as the water in this is shoal, and the bottom foul, it is seldom frequented.

The north side of Long Hope is flat, and midway between Crock Ness and the North Ferry is a spit with 11 feet upon it, extending half the

distance across the Hope ; and to avoid it, it is necessary to keep over towards the southern shore.

ANCHORAGE will be found between the entrance and the nesses, in a depth of from 4 to 7 fathoms over a bottom of mud covered with weed. A good scope of chain is requisite, for should the anchor start, the weeds accumulate about it, and a strain lifts it entirely out of the ground. The squalls in north-westerly winds are very heavy, and though the anchorage is considered safe, 4 or 5 vessels have been seen on shore at a time, from the neglect of due precaution.*

Water.—The kirk, a large building with a belfry, is upon the east side of the South Ness, and on the beach near is an excellent spring of water, where 20 tons a day might easily be obtained.

Letters are despatched once a week from this place to Widewall for the convenience of shipping.

DIRECTIONS.—If bound into Long Hope during the latter portion of the flood stream, pass round to the southward of Switha and between that island and Flota, for in the channel between Cantick head and Switha, the stream turns to the south-westward one hour after high water by the shore, and a vessel using it would be set back into the firth ; whereas, in the route recommended, the flood stream continues for an hour longer, and the ebb would be in her favour when to the northward of Switha.

With a westerly wind and flood tide, it is necessary to haul round Cantick head as closely as possible, for the stream sets very rapidly from the head to the west point of Switha, and without a vessel weathered the latter island, she would be unable to get to Long Hope.

Vessels approaching Long Hope from the southward, are often driven past the port by the ebb-stream. Should a vessel bound to the Hope be off Duncansby head at the first of the ebb, and the wind be from N.N.W., stand well towards the Pentland skerries, and work along the shore of South Ronaldsha until able to fetch Stangar head ; but if set to the westward of Swona, then it is necessary to lie-to in the ebb-eddy on the west side of that island, until the last quarter's ebb, when the stream will be setting for Switha ; with a light wind, and the chance of not being able to fetch Switha before the flood makes strongly, then stand into the shore of South Walls to the westward of Cantick head, and take advantage of the first of the flood-stream, which sets towards Cantick head, and between the head and Switha.

If bound westward from Long Hope, weigh after high water, for the ebb stream will then be found setting round Cantick head, and to the westward close along shore as far as Turn Ness. Should there be wind

* A life boat is stationed at Long Hope.

enough to enable a vessel to stem the tide, then weigh an hour or so earlier.

If bound southward from Long Hope with a fresh fair wind, weigh at low water by the shore, run through the Switha channel, where the rate of tide is seldom more than $2\frac{1}{2}$ miles an hour, and afterwards steer right across to Barth head. The ebb stream will then edge the vessel over towards Duncansby head, and leave her in a good position to take advantage of the first of the flood stream. On the other hand, should the wind be light, weigh at the same time, steer to the southward from Cantick head, and pass to the westward of Swona, so as to reach a fair berth in mid-channel ready for the turn of the tide. If too early, then remain in the ebb eddy of Swona until the stream slackens.

The mistake is frequently made of not weighing till the flood-stream has begun; this renders it impossible to get to the westward of Swona, in which case, should it fall calm, there is danger of being set either upon the Lother or the Pentland skerries.

WIDEWALL HARBOUR, in South Ronaldsha, E. $\frac{1}{4}$ N., $3\frac{1}{2}$ miles from Cantick head, is another well-known place of resort, having its entrance between Hoxa head to the northward, and Herston head to the southward, both which points are rocky and steep-to. Here is good shelter for small



Entrance to Widewall harbour, N.E. $1\frac{1}{2}$ miles.

vessels, and the sides of the approach being free from danger, a stranger may run in and take up a berth according to the draught of his vessel; but as large vessels cannot get sufficiently within the harbour to shut in Hoxa head, they are liable to be driven ashore in westerly gales, and several accidents of this sort have happened. In strong westerly gales, however, vessels can run into Widewall harbour, under close-reefed top-sails or bare poles, when they could not get into Long Hope; and it also has the advantage of allowing vessels bound to the westward to sail out of it with a fair wind. The village of Widewall consists of an inn, two shops, and a dozen houses, but no dependence can be placed on obtaining common supplies, or even water, except in small quantities. Farming and fishing are the joint occupations of the inhabitants, the latter being prosecuted with some success.*

CAUTION.—Vessels leaving Widewall in light winds, with a strong ebb tide, run much risk of being set on the Lother.

* See North Sea Pilot, Part II., page 35.

DIRECTIONS.—In entering Widewall, steer directly for Roebury house, and when the harbour opens, round-to, giving Herston point a berth of $\frac{1}{2}$ a cable. Anchor in 4 fathoms, sand, with Cantick head touching the high-water mark of Herston head W. $\frac{1}{4}$ N.; but vessels drawing 10 feet and under may go farther in upon the sand, which is very flat. A vessel having lost her anchors may safely be laid ashore on the flat, well within Herston point, for no weight of swell finds its way into the inner harbour. It is high water, full and change, at Widewall at 9h. 3m.; springs rise 10 feet, neaps $7\frac{1}{2}$ feet.

From Herston head to the southward, the western shore of South Ronaldsha forms a bay 3 miles wide, and nearly a mile deep, into which the flood-stream sets after passing Cantick head. Barth head, the southern point of the bay, and a well-marked object from various parts of the firth, is a precipitous cliff of stratified slate. At a mile farther to the southward is Wing head, a cliff 50 feet high, and at $\frac{1}{2}$ a mile to the southward of Wing head is Brough Ness, the south-west extremity of South Ronaldsha: this is low, with a large two-storied house a little within it.

SURWICK BAY, between the two last-mentioned points, derives some slight shelter from a point of rocks extending out from Wing head, and the Lother lying off the entrance. The bottom is rocky, with the exception of a small patch of sand at the head of the bay, and vessels seldom take shelter in it.

Ferry.—This is the northern terminus of the ferry across the Pentland firth, which a boat plies daily. It is an interesting fact, that two open boats have crossed this dangerous strait for thirty years without the occurrence of a single accident; nor have they once been driven out of the firth; so accurate is the knowledge of the ferrymen as to tides and weather. The passage has been made in one hour, and it seldom exceeds three.

The LOTHER rock, just mentioned, is rightly considered as the most formidable danger in the Pentland firth. The outer point lies with Herston head just open of Barth head; Wing head N.N.E. $\frac{3}{4}$ E. nearly $\frac{7}{10}$ of a mile, and Brough Ness E. by S. $\frac{1}{4}$ S. nearly $\frac{6}{10}$ of a mile. It is nearly all covered at high-water neaps; but the sea is seldom so smooth as to prevent a break or ripple. It is particularly dangerous in spring tides and light winds, for vessels passing Brims Ness and drifting along the Orkney shore, or leaving Long Hope or Widewall, all run a risk of being set upon it. The worst period of the tide is about two hours before high water by the shore, or when it is high water at Thurso; for then the stream sets directly upon the rock, at the rate of 9 miles per hour, leaving an eddy on the east side, marked by a margin of broken water. At such a time, the pressure of the stream occasions a fall of a couple of feet over the rock, and vessels set upon the reef have been known to roll over it, and

sink in deep water. A narrow belt of the stream also rushes through within the rocks at the first turn of the stream. During the ebb, a counter-tide is formed on the north side of the Lother, and the stream passing Brough Ness turns round, and sets right upon the west face of this rock. A beacon painted *red* and 37 feet high, is placed near the south-west or outer end of the Lother.

Wideford hill, near Kirkwall, just open of Barth head N. by E. $\frac{3}{4}$ E., clears the Lother on its west side, and Old head well open of Brough Ness E. $\frac{3}{4}$ S., clears its south side.



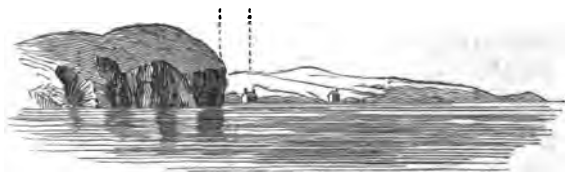
Wideford hill, open of Barth head,
N. by E. $\frac{3}{4}$ E.



Old head, well open of Brough Ness,
E. $\frac{3}{4}$ S.

LIDDEL EDDY, extending from the Lother to Old head, is caused by the deflection of the flood to the southward by the Lother and Broughness. A little before high water, the stream on the east side of South Ronaldsha turns to the southward, gradually forcing the eddy outwards, which, towards slack water, occupies the whole space between Old head and Pentland skerries. It is large enough to be a safe and convenient stopping place for vessels waiting for the turn of the tide. During the ebb stream there is but little eddy here, and that close in-shore, caused by the Old head and the rocks extending from it.

OLD HEAD, (noticed on page 93,) the south-east point of South Ronaldsha, has a reef, named the Old skerries, extending from it for $1\frac{1}{2}$ cables to the eastward, which is cleared by keeping the kirk near Kirk Ness open of Halcro head N.N.E. $\frac{1}{4}$ N. The outer rock is never entirely covered.



Kirk near Kirk Ness, open of Halcro head, N.N.E. $\frac{1}{4}$ N.

This completes the northern, or Orkney side of the Pentland firth, and it only remains to describe Swona, an island in the body of the firth, belonging to the Orkney group.

SWONA bounds the Pentland firth to the northward, and Tarftail, the south-west end of it, bears from Swilkie point, the north-east end of Stroma, N.E. $\frac{3}{4}$ E. $2\frac{1}{4}$ miles.



• Swona, W.N.W. $1\frac{1}{4}$ miles.

This is the narrowest part of the outer passage, and has received the name of the Outer sound. Swona lies in a general N.E. by E. direction; it is about a mile long, and $\frac{1}{2}$ a mile wide, and of a crescent shape, its western shore being concave. The eastern side is composed of cliffs, but a low rocky foreshore bounds the west side, projecting in some places 150 yards, and one low-water rock, the West Bow, lies out $1\frac{1}{2}$ cables, one-third down from the north end of the island. The extremities of the island are of bare black rock, while the centre rises into a rounded summit 168 feet high. The inhabitants, 50 in number, have their houses about midway on the west side, where most cultivation exists, and they by turns act as pilot, fisherman, or farmer. The only spring of water upon the island is among the rocks at the south end, and this is often covered by the tide; there are indifferent landing-places on either side of the north end, but it is frequently impossible to approach the island in any direction.

Numerous wrecks have occurred on this island from vessels driving down upon it with the tide; the invariable rule with the pilots in such cases is to drop an anchor, for, as the ground is shelly, it is seldom lost. No vessel touching has ever been got off again.

SWONA FLOOD EDDY reaches from the east side of the island nearly to the Lothar, and the northern edge of it in E.S.E. gales causes a dangerous swilkie. On the east side of the island is very deep water, with a rocky bottom, and few vessels anchor there. If drifting through on the flood, and when within 2 miles of Swona, Pentland Skerry is open to the southward, the vessel will be set to the southward of Swona, with a velocity in springs of 9 knots per hour; but should she pass within $\frac{1}{2}$ of a mile of the island, she will probably be set into the eddy on the east side, out of which it is difficult to get in light winds.

SWONA EBB EDDY has its southern edge in the direction of Turn Ness, and is formed by the ebb, divided by the convexity of the eastern side, rushing along and past each end of the island, with a velocity greater than in the case of any other island. The eddy is extensive, and the cross or counter sets in it are very sportive, so that the most

experienced cannot predict the direction they will take at any given time.

If drifting towards the island with the ebb during a calm, it requires the eye of a good pilot to determine which end the vessel will be set round, nor is it easy to give a stranger a guiding mark, for the appearances nearly to the last are as if she were drifting upon the centre of the island. It may, however, be generally stated, that if Cantick head is open of the north end of the island, she will drift to the northward, and if Brims Ness is open of the south point of the island, she will be set to the southward.

TIDES.—It is high water on the east side of Swona, full and change, at 10 h. 24 m., or 2 hours after Thurso, but on the west side of the island high water occurs half an hour earlier than on the east side. In the Outer sound, or the channel between Swona and Stroma, the stream turns exactly 3 hours after the time of high and low water.

Full information for navigating the Pentland firth is given in the North Sea Pilot, Part II., Chapter II.

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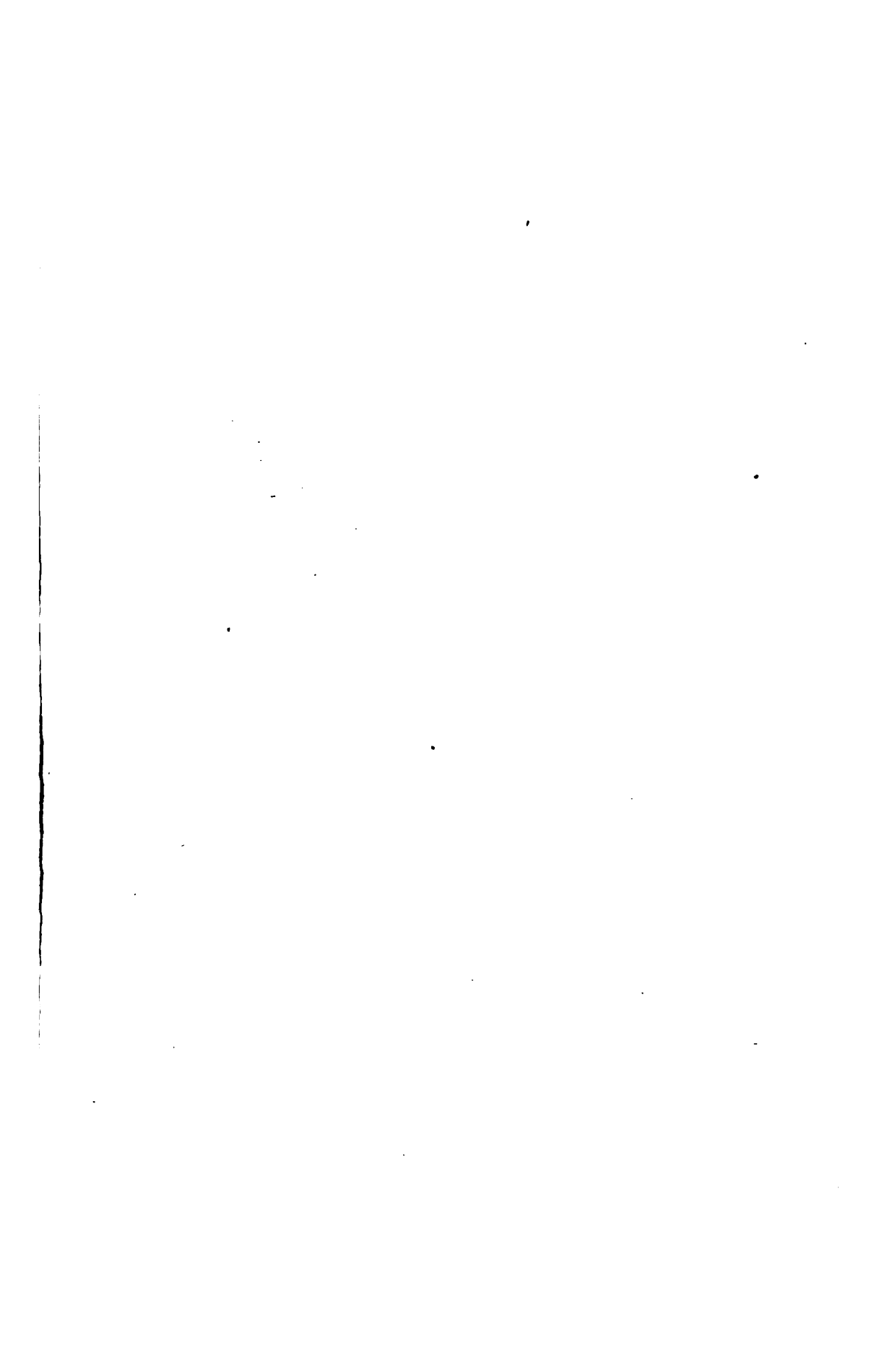
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L O N D O N :

*Printed by GEORGE E. EYRE and WILLIAM STODDART,
Printers to the Queen's most Excellent Majesty.*

For Her Majesty's Stationery Office.

[1524.—500.—376.]

[1597.—250.—376.]

